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# The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

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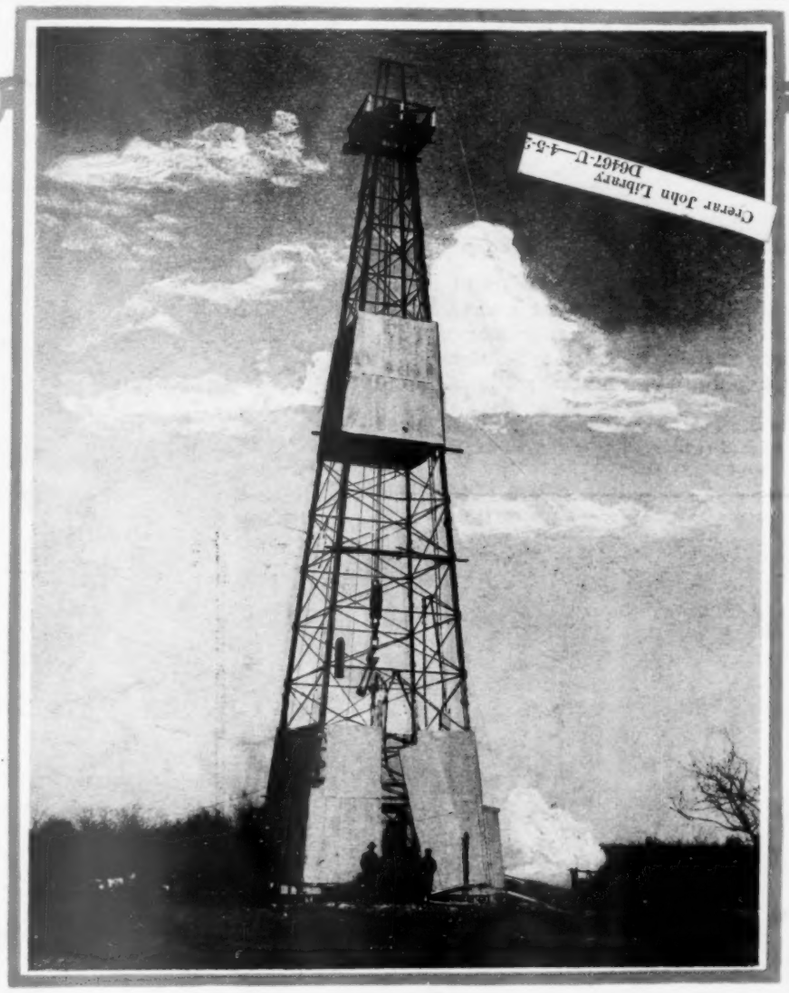


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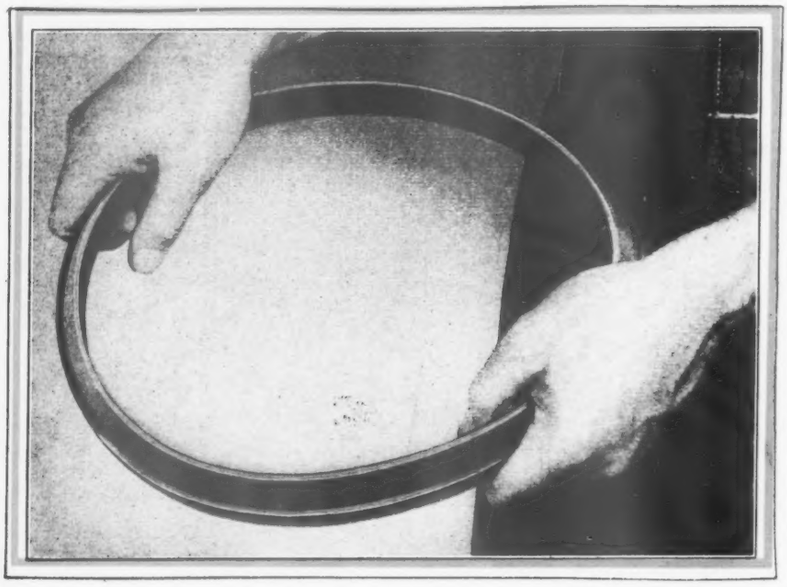

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# Crude Market Situation is On Edge

**Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.**

## Coming Increase in Production in Oklahoma and California May Be Offset by Shutdown in Panhandle

By James McIntyre

**Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.**

With wars and rumors of more wars among the big gasoline vendors in California, which together with an outlook for a higher crude production there, threatens even the crude price structure in the Pacific fields; a cut to $1.25 per barrel, flat price, regardless of gravity, for Hutchinson and Carson County crude in the Texas Panhandle; with purchasers of Upton-Crane County crude oil in west Texas shying at it; and Seminole County, Oklahoma, threatening to develop a field with a possible peak of 100,000 barrels or more within a month, the general crude market situation is in a jumbled state.

In Oklahoma, Kansas and north central Texas at present everything is slipping along normally. All crude buyers, big and little are taking all the crude offered and none of them are showing the signs of distress they usually display at this time of year, when, as a rule, the big companies are importuned by the littler fellows to take surplus crude off their hands. In that territory the whole situation is up to the Seminole Field. Seminole, on Tuesday of this week, was producing close to 30,000 barrels a day from five Wilcox sand wells and 23 Hunton lime wells. The five Wilcox sand wells were producing over two-thirds of the total. In a short time the field will make 50,000 barrels.

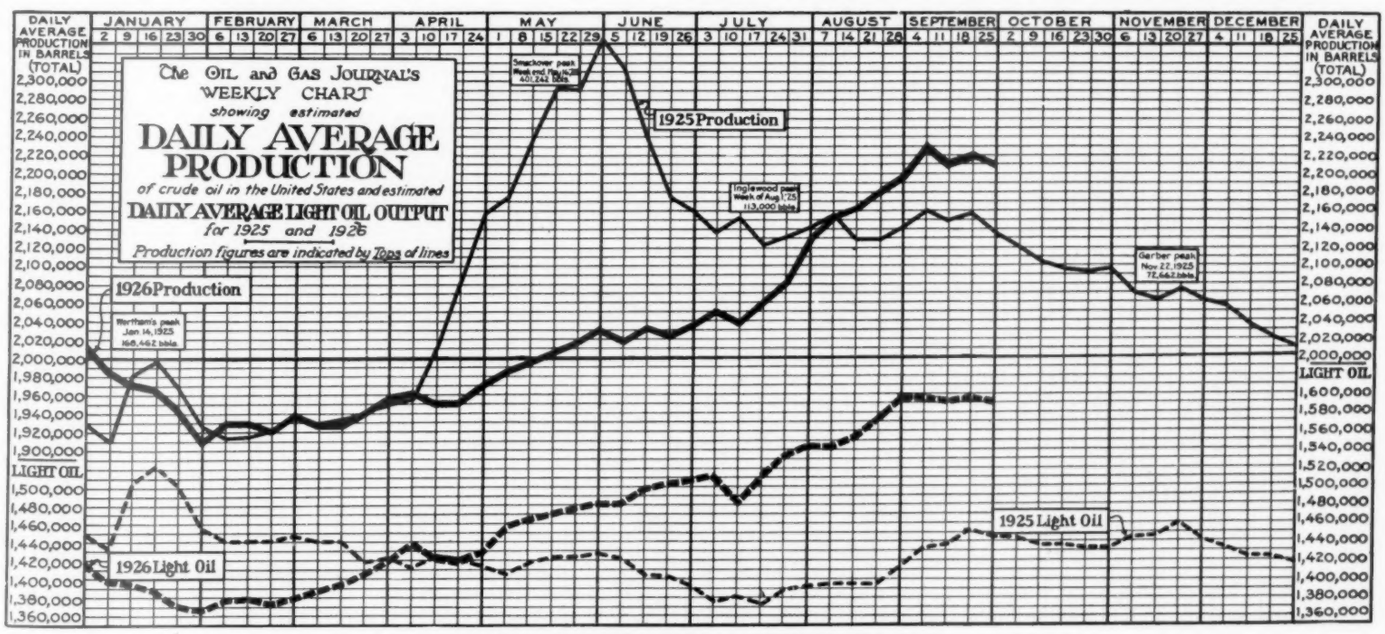
This would be sufficient to cause purchasers to raise the sign of distress but future action in the Texas Panhandle Field may be the means of offsetting this excess in Oklahoma. A meeting of Panhandle operators held in Tulsa on Tuesday, which was continued until Wednesday may result in a general shutdown of drilling wells in that vast area because of the overproduction there and the lack of market for the crude at a price that would pay for the drilling. If this meeting brings about a cessation of the mad orgy of drilling it will no doubt have a strong tendency to steady the price structure a little later when California and Oklahoma are showing an increase in output. Without the Panhandle the Mid-Continent Field is not producing as much oil now as it was a year ago. In the last week of September, 1925, the Mid-Continent produced an average of 1,116,705 barrels a day. Now it is producing 1,167,695 barrels, but of this 123,860 barrels comes from wells in the Panhandle. With a shutdown of drilling in the latter field the increase expected in Oklahoma and California may be offset, leaving a healthy crude market.

### PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended September 25, and a comparison with the previous week follows:

| | Sept. 25 | | Sept. 18 | |
|---|---|---|---|---|
| | Light | Heavy | Light | Heavy |
| **Oklahoma—** | | | | |
| Tonkawa | 37,900 | ..... | 39,285 | ..... |
| Burbank | 47,040 | ..... | 47,810 | ..... |
| Other Osage Fields | 34,280 | ..... | 34,020 | ..... |
| Cushing and Shamrock | 21,515 | ..... | 21,450 | ..... |
| Bristow and Eastern Bristow | 27,460 | ..... | 27,500 | ..... |
| Cromwell | 15,450 | ..... | 15,475 | ..... |
| Garber | 28,700 | ..... | 29,030 | ..... |
| Blackwell-Braman | 21,660 | ..... | 22,140 | ..... |
| Seminole | 23,940 | ..... | 20,260 | ..... |
| Wewoka | 28,150 | ..... | 30,040 | ..... |
| Northern Miscellaneous | 116,100 | ..... | 115,100 | ..... |
| Southern Fields | 65,550 | ..... | 65,000 | ..... |
| Total Oklahoma | 467,245 | ..... | 467,110 | ..... |
| North Louisiana | 41,665 | 15,425 | 42,200 | 14,255 |
| **Arkansas—** | | | | |
| Smackover | 14,540 | 119,430 | 14,620 | 119,310 |
| Miscellaneous | 18,510 | ..... | 18,515 | ..... |
| Total Arkansas | 33,050 | 119,430 | 33,135 | 119,310 |
| North Central and West Texas | 191,750 | ..... | 187,385 | ..... |
| Texas Panhandle | 123,860 | ..... | 120,815 | ..... |
| Powell | 27,120 | ..... | 27,600 | ..... |
| Mexia, Currie, Richland | 14,780 | ..... | 14,945 | ..... |
| Nigger Creek | 13,200 | ..... | 17,600 | ..... |
| Wortham | 6,150 | ..... | 6,470 | ..... |
| Kansas | 114,020 | ..... | 112,150 | ..... |
| Total Mid-Continent Area | 1,032,840 | 134,855 | 1,029,410 | 133,565 |
| Gulf Coast | ..... | 188,390 | ..... | 193,701 |
| Southwest Texas | ..... | 45,625 | ..... | 45,525 |
| Eastern | 110,200 | ..... | 109,300 | ..... |
| Rocky Mountain Area | 104,150 | ..... | 109,210 | ..... |
| **California—** | | | | |
| Santa Fe Springs | 48,500 | ..... | 48,500 | ..... |
| Long Beach | 95,000 | ..... | 97,000 | ..... |
| Huntington Beach | 47,000 | ..... | 45,500 | ..... |
| Torrance | 5,000 | 22,000 | 5,000 | 22,500 |
| Dominguez | 22,500 | ..... | 22,500 | ..... |
| Rosecrans | 13,000 | ..... | 13,500 | ..... |
| Inglewood | 25,000 | 18,000 | 25,700 | 18,300 |
| Ventura Avenue | 49,500 | ..... | 49,000 | ..... |
| Remainder of State | 43,500 | 208,500 | 42,500 | 210,000 |
| Total California | 349,000 | 248,500 | 349,200 | 250,800 |
| Total United States | 1,595,690 | 617,370 | 1,597,120 | 623,591 |
| Grand Total | | 2,213,560 | | 2,220,711 |

→ **Total Decrease, 7,151 Bbls.; Light Oil Decrease, 1,430 Bbls.** ←




WHAT AND WHERE TO BUY—PAGES 149-150-151

# Rains Cause Gloomy Gasoline Market

## Nearly All Oklahoma Refined Products Suffer Declines. Export Cut Comes as Bearish Factor

By Neil Williams

The past week was far from encouraging for Oklahoma refiners. The weakness which existed in the Group 3 refined market the previous week was even more pronounced and practically all products suffered decided reductions in prices. Summed up, the market as a whole was extremely dull and soft.

General conditions worked against the market. Gasoline demand was placed at a minimum because of the cold weather and rains which blanketed the entire marketing territory, as well as the whole country, as unfavorable to motoring as existed at any other time this year.

Coming at this period with the gasoline season already on the wane, the rains and storms were of such a nature that hopes for any important improvement in gasoline consumption during October were light. It is admitted that if clear, warm weather materializes soon it will be at least a week or two after that before there can be any appreciable increase in consumption because of the extremely muddy roads.

The pessimism which prevailed regarding gasoline was augmented by a reduction by the Standard Oil Co. of New Jersey of one-half cent in its contracts for export material. Although the reduction hurt North Texas refiners to a greater extent, it increased the general bearish trends in Oklahoma and resulted in a marked lessening of morale.

Placing the new net price on contracts for 64-66 375 at a new low of 10.65 cents in North Texas and 10.55 cents in Oklahoma, the reduction resulted in an extremely unsettled situation with true market prices of gasolines very indefinite, considering the narrow margins between the various grades.

Trading in practically all the major refined products was virtually at a standstill except for scattered cars for immediate shipment and efforts of some refiners to move material met with little success. This easily opened the way to concessions which only caused buyers to place orders more cautiously.

Although the colder weather is more conducive to fuel oil, gas oil and distillate consumption, these products have failed to respond and prices the past week were lower and softer on all grades except distillates. The refinery demand for distillates was considered only fair, compared to what it had been in previous weeks although furnace oil sales by distributors were active.

Several sellers reported they tried to move fuel oil and gas oil the past week only to find that buyers were well stocked and in no need of the heavier refined products. This was especially true of gas oil. This condition is believed to be only temporary and with a continuation of this cold weather there may be a revival in fuel oil and gas oil demand. There are many market students, on the other hand, who are of the opinion that industrial users and distributors of burner fuels bought in sufficiently large quantities when prices were lower to carry them through this cold period at least and that not until prices are materially lower than at present will there be any effort to buy again.

### Unfavorable Factors

The Oklahoma gas oil market was quieter than it might have been due to the fact that what few buyers there were could not fill their requirements with cheaper material offered from other refining centers. Some Louisiana refiners were among those putting zero cold

(Continued on Page 132)

### REFINED MARKET BAROMETER

A softer and uncertain tone prevailed in refined markets of the country the past week. Gasolines were considerably less active, especially in the Mid-Continent and Chicago districts, due both to the seasonal decline in consumption and also to extremely unfavorable motoring weather. The continued bitter retail price wars in California also caused additional misgivings as to markets in that State, and the same unsettled conditions there resulted in large quantities of Pacific Coast gasoline becoming more of a factor on eastern markets. Kerosene was universally quiet, and sharp price reductions were in order in some districts. Only in eastern markets were fuel oils and gas oil firm, and there gas oil was more plentiful. In other areas prices were materially reduced, including gas oil in the Gulf Coast. This weakness was felt despite the cold weather, usually conducive to a good demand for these products, but buyers were reported as well stocked. Distillates continued firm in all areas, with a heavy demand for furnace oils reported. Natural gasolines weakened decidedly in line with refinery material. Lubricants were fairly steady in price in most areas, but an acute weakness still prevailed in eastern cylinder stocks.

**Mid-Continent**—Prices on nearly all products lower and markets dull. Gasoline demand cut to minimum, due to cold weather and rains over marketing territory. Natural gasolines also soft. Kerosene inactive. Efforts to move fuel oil and gas oil find little success. Distillates movement only fair, but prices firm.

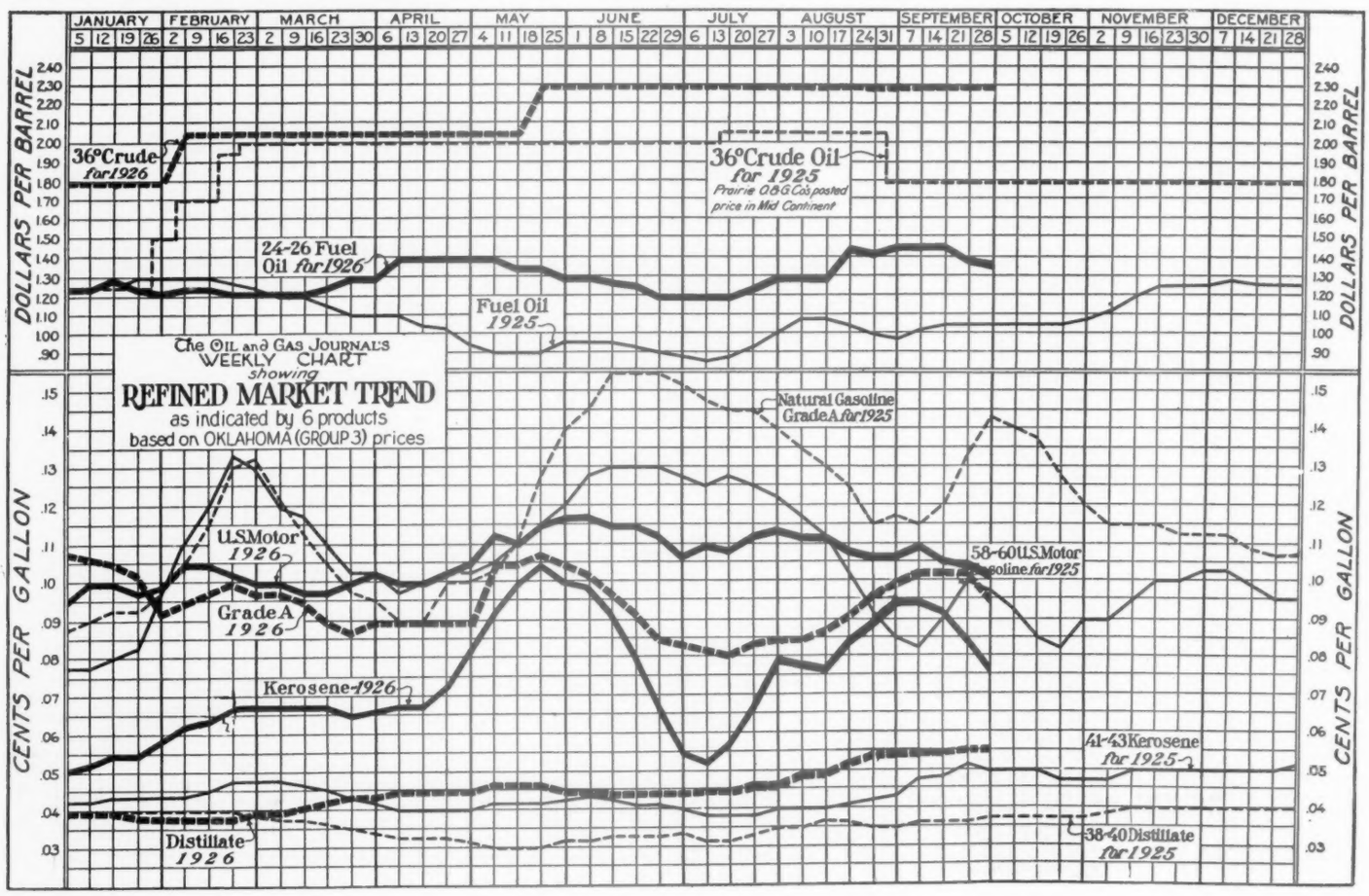
**Atlantic Seaboard**—California gasoline becoming more of factor on eastern markets, but prices still holding. Kerosene less active. Gas oil plentiful, but Diesel oil firm. Lubricant prices steady, with cylinder oils in better demand. Wax improved.

**Pennsylvania**—Gasoline uncertain and consumption off. Kerosene softer, but fuel oil stronger. Wax prices shaded. Cylinder stocks very weak, but bright and filter stocks in good demand.

**Chicago**—Gasoline quiet, due to weather conditions. Kerosene only in light demand. Distillates firm, and furnace oil sales heavy. Gas oil being bought only in limited quantities. Fuel oil down.

**California**—Retail gasoline price war grows more acute, causing extremely unsettled refinery market. Other products unchanged.

**Gulf Coast**—Gas oil weaker and prices down. Lubricants spotted, but prices generally only slightly changed.



# Important New Area in Panhandle

## Roxana Proves Up New Spot in Carson County Between Main Fields of Hutchinson and Carson and 11 New Locations Are Staked

By C. D. Lockwood

Due to the prolific production of good, high gravity crude in the Roxana Petroleum Corp.'s No. 1 E. F. Bryan, in the C NE of Section 92, Block 4, I. & G. N. Survey in Carson County, the area between the Hutchinson-Carson County producing zones and the Pampa Pool of Gray County is receiving even greater attention than has heretofore been paid to it, which is saying plenty. This well produced 600 bbls. in 18 hours and then was shut in while tankage was erected. It was producing from granite wash at 3,174-78 feet and when opened up failed to respond again as it had at first. Deepening of 2 feet, however, brought it back to 55 bbls. an hour and 11 new locations have been staked around it in Sections 92, 91 and 107.

The McMan Oil & Gas Co. was building rig on two of these locations and had a couple of others staked. No. 1 Bryan is in the NW cor. SE SW, Section 107 and has rig building; No. 2 is in the NE cor. SE SW; No. 3, SE cor. and No. 4 in the SW cor. of the same 40 acres. Nos. 1 and 3 are building rigs.

The Roxana Petroleum Corp. is erecting three additional rigs around its producing well. No. 2 E. F. Bryan is in the SW cor. NE SW of Section 107; No. 3 is in the SE cor. NE of Section 92, and No. 4 is in the SW cor. of Section 107.

The Marland Oil Co.'s No. 1 E. F. Bryan is located in the NE cor. SE. Section 92. The Texas Company's No. 1 M. P. Co. fee, has rig building in the SW cor. NW of Section 91, and a location is also made for No. 2 in the NE cor. NW of the same section. Munn & McAuley's No. 1 Bryan is in the NE cor. SW SW, of Section 107. All of these are 330-foot locations. Some fancy prices were paid for several pieces of acreage in this vicinity, as recorded in last week's The Oil and Gas Journal.

Several tests are drilling in the big area between the Pampa and Hutchinson-Carson Pools, and it is an interesting fact that practically every well completed in this area has found some oil, although in several cases the amount was insufficient for commercial production.

### Prospects Near King's Mill

One spot that is receiving enough play to indicate that several companies believe a new pool exists in the immediate vicinity, is just north and east of Kings Mill, on the Gray County side of the Gray-Carson line. The Gulf Production Co.'s' No. 1 McConnel, NW cor. Section 175, Block 3, was drilling at 2,800 feet, and the Skelly Oil Co. started work on a new rig in the NW cor. east half of SE, same section. This will be Skelly Oil Co.'s No. 1 A. G. McKay.

In the next section southeast, Section 161, the Empire Gas & Fuel Co.'s No. 1 J. J. Wall was drilling at 1,900 feet. In Section 152, the Empire's No. 1 Heithholt was still producing 10 bbls. daily last week, and the Magnolia Petroleum Co.'s No. 1 Heithholt, in this section, was rigging up.

The Texas Company's No. 1 Brown, in Section 137, was still yielding 15 bbls. daily. About a mile and a half south and a mile east of it, the Empire Gas & Fuel Co.'s No. 1 Hughey, SE cor. SW, Section 129, was drilling at 2,600 feet.

All of these wells are located within a radius of 4 miles of Kings Mill and are situated on the north flank of the Panhandle arch.

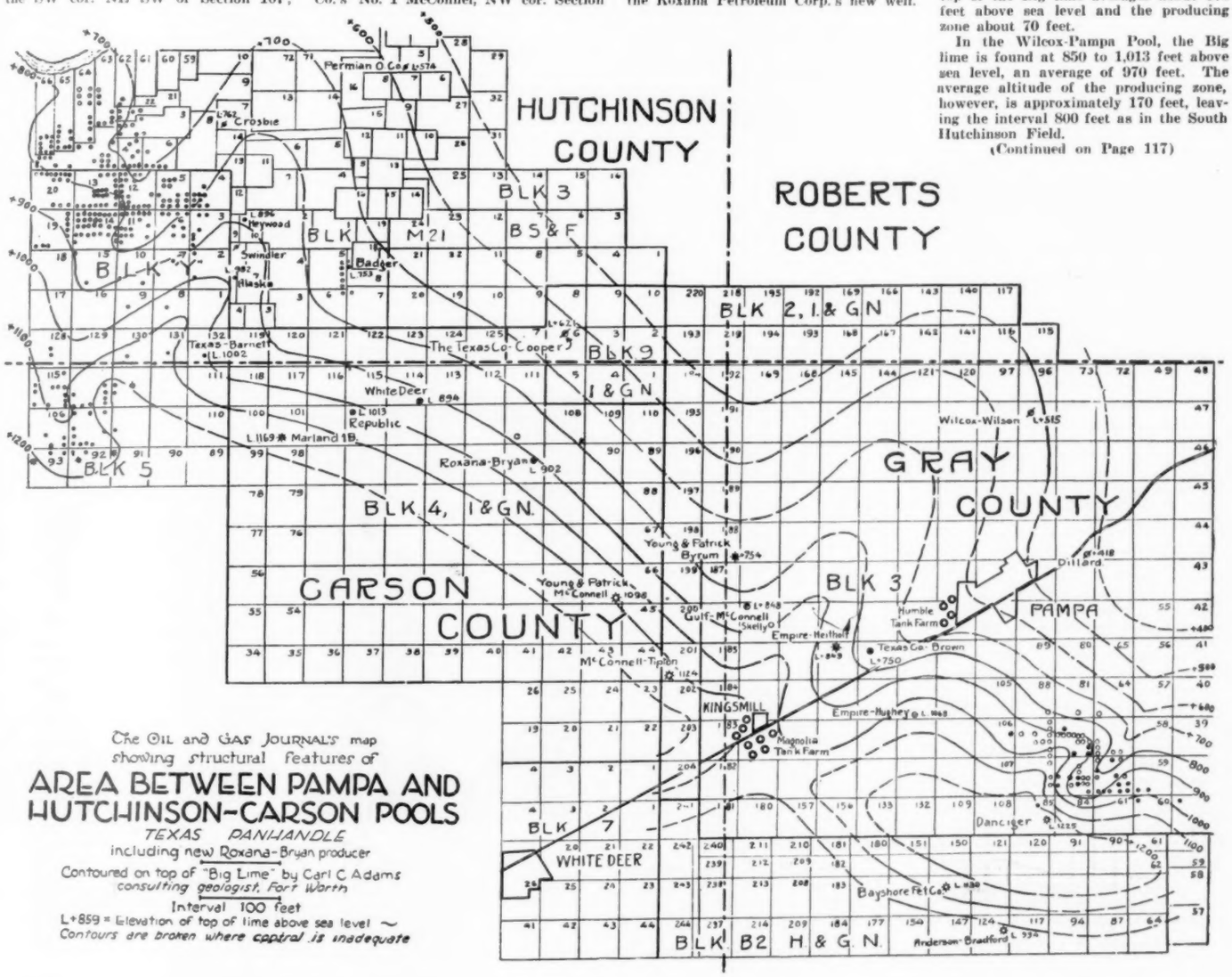
The accompanying map shows the relative positions of these wells and the producing districts. Contours were drawn on the top of the Big Lime at 100-foot intervals to show the approximate structural relationship of the various dry holes producing wells and pools, including the Roxana Petroleum Corp.'s new well. Control points are too far apart in the northeastern part of the map, north of Pampa, to permit any certainty as to the contouring out there, so the contour lines were broken as an indication of this fact. The exact depth at which the Wilcox Oil & Gas Co.'s No. 1 Wilson, north of Pampa, found the lime is also a matter of debate among geologists, but most of them agree on a figure of approximately 500 feet above sea level. This makes it appear that an anticlinal nose extends out in that direction from the main granite ridge and the contours have been drawn in a general direction of north 20 degrees east to conform with the general strike of other cross folding along the ridge.

### A Panhandle Peculiarity

A peculiarity of oil accumulation in the Texas Panhandle has been the fact that the most prolific production has been found in the re-entrant bays or synclinal depressions as defined by structural contours drawn on the top of the Big lime, and that the big wells occur where the interval between the top of the lime and the producing zone averages about 800 feet. In the South Hutchinson Field, the biggest wells are found where the top of the Big lime averages about 870 feet above sea level and the producing zone about 70 feet.

In the Wilcox-Pampa Pool, the Big lime is found at 850 to 1,013 feet above sea level, an average of 970 feet. The average altitude of the producing zone, however, is approximately 170 feet, leaving the interval 800 feet as in the South Hutchinson Field.

(Continued on Page 117)




The OIL and GAS JOURNAL'S map showing structural features of

**AREA BETWEEN PAMPA AND HUTCHINSON-CARSON POOLS**

TEXAS PANHANDLE

including new Roxana-Bryan producer

Contoured on top of "Big Lime" by Carl C. Adams consulting geologist, Fort Worth

Interval 100 feet

L+859 = Elevation of top of lime above sea level ~ Contours are broken where control is inadequate

# Cracked Gasoline Motor Fuel of Future

## Jobbers Told Output and Popularity of Product Will Increase. Benzol Equivalent of Several Grades Shown

By Dr. Roy Cross*

It is not possible to discuss the present or the future motor fuel without referring more particularly to gasoline made by the thermal decomposition of the heavier oils. While in 1916 the relation of cracked gasoline or gasoline made by thermal decomposition to the total motor fuel used was very small and the yield of gasoline from crude oil amounted to only 19.8 per cent in 1926, the proportion of cracked gasoline to total motor fuel is more than 27 per cent, and the total yield of gasoline from crude oil is approximately 36 per cent.

The sources of our present motor fuel are as follows:

| | |
|---|---|
| Gasoline made from straight distillation of crude oil | 61.37% |
| Gasoline made by cracking | 26.95% |
| Gasoline extracted from natural gasoline | 10.93% |
| Motor fuel or benzol obtained by the cracking of coal | 0.75% |
| | 100.00% |

In 1925, out of nearly 250,000,000 bbls. of gasoline consumed, 70,000,000 came from the cracking of heavy petroleum, and during the present year approximately 80,000,000 bbls. will be so obtained. The greater part of the gasoline produced by cracking today comes from a very few cracking processes. The principal ones may be termed the "Big Four" in the cracking industry. These four processes, in order of the amount of production at this time are: the Burton, Cross, Holmes-Manley, and Dubbs. These four, during this year, will produce about 65,000,000 bbls. of gasoline, averaging each about 16,000,000 bbls. An additional 16,000,000 bbls. will come from the other processes, including, in order of production, Isom, Ellis, Jenkins, Coast, Black, Doherty, Fleming, McAfee, Slagter, Ramage, Pyro and Little. Of the four major processes, three operate according to the old distillation under pressure principle, distillation and cracking being effected largely simultaneously. The fourth process operates by first producing what may be termed a "synthetic" crude oil under very high pressure of 500 to 2,000 pounds, and then subsequently distilling at low pressure by the self-contained heat. The other processes include both distillation methods and those operating by heating the vapor under low pressure.

### Antiknock Characteristics

A few years ago, gasoline was rated almost entirely by its gravity, and even today one may find jobbers who sell gasoline at a premium based entirely upon representations of high gravity. While high gravity is often a measure of volatility, the motorist today demands more than high volatility. A most important element is the ease of operation of his car, and the absence of engine knock. He is quite willing to pay, and is actually paying, all over the country, a premium of from 2 to 6 cents per gallon to obtain a motor fuel that will allow him to run his car considerably longer without cleaning the carbon from his engine or will allow him to run without removing the carbon at all. The well informed jobber has found out how to satisfy the motorist in these respects. He has found out that he can obtain at this time, at no, or very little, advance in price, a gasoline with all the desired qualities of high volatility, as well as the antiknock properties. He has found out that gasoline made by cracking is superior to straightrun gasoline; but, as a general rule, he has not found out that there may be a great difference among straightrun gasolines and among cracked gasolines.

The antiknock value of gasoline is dependent upon several factors. These include the source of the crude oil and the method of cracking and distilling. As to the source, it has been found that certain crudes cotain the right hydrocarbon constituents to naturally give the gasoline superior antiknock properties. Types of such crude oil are naphthene and aromatic base crudes, particularly those from California, Russia, and, to a less degree, those from the Gulf Coast districts. Without respect to the type of cracking process, there are again certain crudes that yield particularly good antidetonating gasoline. These crudes include those from the following districts: Smackover, Arkansas; the Gulf Coast districts; Laredo, Texas; California; and Russia. The least satisfactory crudes for cracking into antiknock motor fuel are the pure paraffin base crudes such as those from Pennsylvania and West Virginia. Those intermediate in value are the Mid-Continent crudes from Kansas and Oklahoma, although there are some local and minor exceptions.

### Effect of Cracking

As to the effect of the method of cracking on the antidetonating properties, it may be generally stated that the higher the temperature of the process and the higher the pressure under which this process is carried on the better will be the value of the motor fuel produced. It is now pretty generally recognized that the old vaporphase, low-pressure processes that have generally proved commercial failures produced a gasoline of very good antiknock quality. This gasoline was pretty much a failure commercially because of the difficulty at that time of properly refining it. With modern methods of treating and refining, however, it is entirely possible there will be a limited reversion to this type of cracking. Of the processes named above, this class includes the Ramage, the Pyro, and Little processes.

There is one fault, however, that these processes have not been able to overcome and that is the production of an excessive amount of what is known as unsaturated or olefin hydrocarbons. Such substances tend to unite with each other chemically and form gum, or to undergo what has been termed polymerization. It has been found that essentially the same or better results than those given by this low pressure vaporphase cracking may be obtained at very high temperatures and very high pressures, whether the oil be in the vapor or liquid phase. Such operation is carried out at pressures of from 500 pounds up to 2,000 pounds, and temperatures of 900 degrees to 1,000 degrees Fahrenheit, with the result that most of these olefins are converted into what are termed "cyclic compounds." These include napthene and aromatic compounds of the nature of benzol. It is thought that this conversion is due to the simultaneous cracking and recombination or polymerization. It is believed the method of producing cracked gasoline by distillation under low pressure does not produe as good an antiknock gasoline as under high pressure at higher temperatures, though it is generally conceded that such gasoline is superior to straightrun gasoline made from the same crude oil.

### Adding Chemicals

Another method of improving gasoline is adding something to ordinary gasoline which gives to it the antiknock properties. The only perfectly satisfactory substance used in this country extensively is tetraethyl lead, producing what is known in the trade as Ethyl Gasoline. This gasoline is delivered to the jobber already mixed and, as is well known, is sold at a premium of approximately 3 cents. No valid objection to this method of improving gasoline has been positively demonstrated, but it is believed, judging from the experience in cracking plants, that gasoline having all the satisfactory properties of ethyl gasoline will be extensively available without the addition of any foreign substance.

Probably the most satisfactory motor fuel made entirely from hydrocarbons are the benzol gasoline blends. These consist of either cracked or straightrun gasoline mixed with from 10 per cent to 60 per cent of benzol. The great value of such fuels has been perfectly apparent to the careful motorist and the jobbers who have sold these blends have been the real pioneers in educating the public. Such blends not only improve the operating qualities of the automobile, but also give greater power. The greater power is occasioned by two facts. One of these is that the engine can operate at a high compression ratio such as would be found in a condition with a considerable amount of carbon in the cylinders. It may be said in general that with the same gasoline the power output of the motor is proportional to the compression ratio. In tests made in the Kansas City Testing Laboratory it has been demonstrated that as much as 25 per cent more power may easily be obtained from an engine using commercial antiknock motor fuel as a result of the increased compression alone. The other element in a motor fuel giving greater power is the higher calorific value. It is to be noted that the lower the gravity the greater the power value of the motor fuel. Benzol, for example, has a very much higher heat value than gasoline, and therefore gives increased power without respect to its antiknock value. It has been argued by opponents of the use of benzol that this would cause, when used with gasoline, excessive heating of the motor. This argument is not sound, for the reason that the excess heat is consumed in producing power and this power is produced during a longer time interval or throughout the entire stroke of the piston, and the temperature might actually be lower than in the case of straightrun gasoline.

It is, therefore, the temperature to which the material of an engine is heated that causes damage from overheating, and not the calorific value of the fuel that is used. Because of the fact that benzol blended fuels are so well recognized, it has become the custom among investigators to rate a cracked gasoline or any blended motor fuel on the basis of its performance in proportion to a paraffin base gasoline blend with benzol. In other words, a cracked gasoline is tested in an engine to determine the compression ratio at which a standard knock is produced, or it is tested to determine the compression at which the greatest power is produced. If, for example, the power output is the same as a blend of 40 per cent of benzol with 60 per cent of straightrun gasoline, then the fuel is rated as having a benzol equivalent of 40. At the present time, a blend of 40 per cent of benzol with 60 per cent of straightrun paraffin base gasoline has been tacitly accepted as a standard antiknock fuel. On this basis, then a number of motor fuels were tested in a variable compression engine of the Kansas City Testing

(Continued on Page 128)

*Address at Four State Oil Convention, Kansas City, Mo., September 28.

## FOUR STATES JOBBERS MEETING; MISSOURI ELECTS ALLEE PRESIDENT

KANSAS CITY, Mo., Sept. 28.—George S. Allee, who has served as field secretary of the association for the past three years, was elected president of the Missouri Oil Men's Association at a meeting held here today. Mr. Allee succeeds the late Horace G. James. He will continue to devote all his time to association work with headquarters in Kansas City.

The meeting of Missouri jobbers was held here this morning previous to the opening of the Four State Jobbers convention which extends through tomorrow. Jobbers from Iowa, Kansas and Nebraska who are participating in the general convention also held state meetings this morning. Their sessions were devoted to discussions of legislative and tax matters pending in their states.

The first general business session was held this afternoon. Dr. Gustav Egloff, of the Universal Oil Products Co., and Dr. Roy Cross, of the Kansas City Testing Laboratory, delivered the principal addresses. Their addresses, concerned with the motor fuel of the future, proved of great interest to the large number of jobbers and refiners present.

Indications late this afternoon pointed to a record attendance for a sectional meeting of jobbers. Approximately 300 had registered late this afternoon.

Other officers elected at the meeting of the Missouri association were as follows: Vice presidents, C. L. Achert, Pierce Petroleum Corp., St. Louis; Wash Adams, Purity Oil Co., Springfield; John G. Gibson, Capital City Oil Co., Jefferson City; Wallace Smith, Red Eagle Oil Co., Macon; directors, E. L. Martin, Manhattan Oil Co., Kansas City; W. R. McCain, Purity Oil Co., Springfield; Arthur Land, Land Petroleum Co., Springfield; C. B. Hood, Joplin Oil Co., Joplin; Paul McMahan, Independent Oil Co., Seymour; Bert Bertram, Bertram Naphtha Co., Kansas City; Harry Mutz, Independent Oil Co., Maryville; George Koertell, Liberty Bell Oil Co., St. Louis; Dave Cohen, Puritan Oil Co., St. Louis; Walter Ware, Lubrite Sales Corp., St. Louis; H. E. Miller, H. E. Miller Co., Festus; W. T. Atkins, Skelly Oil Co., Kansas City; Rupert Cox, Central Oil Co., St. Joseph.

George S. Allee

# Seminole the Biggest Thing in Sight

## Sixty Present Drilling Wells Look Like "Sure-Shot Producers," With Many More Drilling on Wildcat Locations

By J. L. Dwyer

The Seminole Pool in Seminole County, Oklahoma, is the cynosure of all eyes at present. It is the hub from which all petroliferous calculations radiate, and all prophecies regarding the immediate future of the crude oil market's stability are based upon that spot.

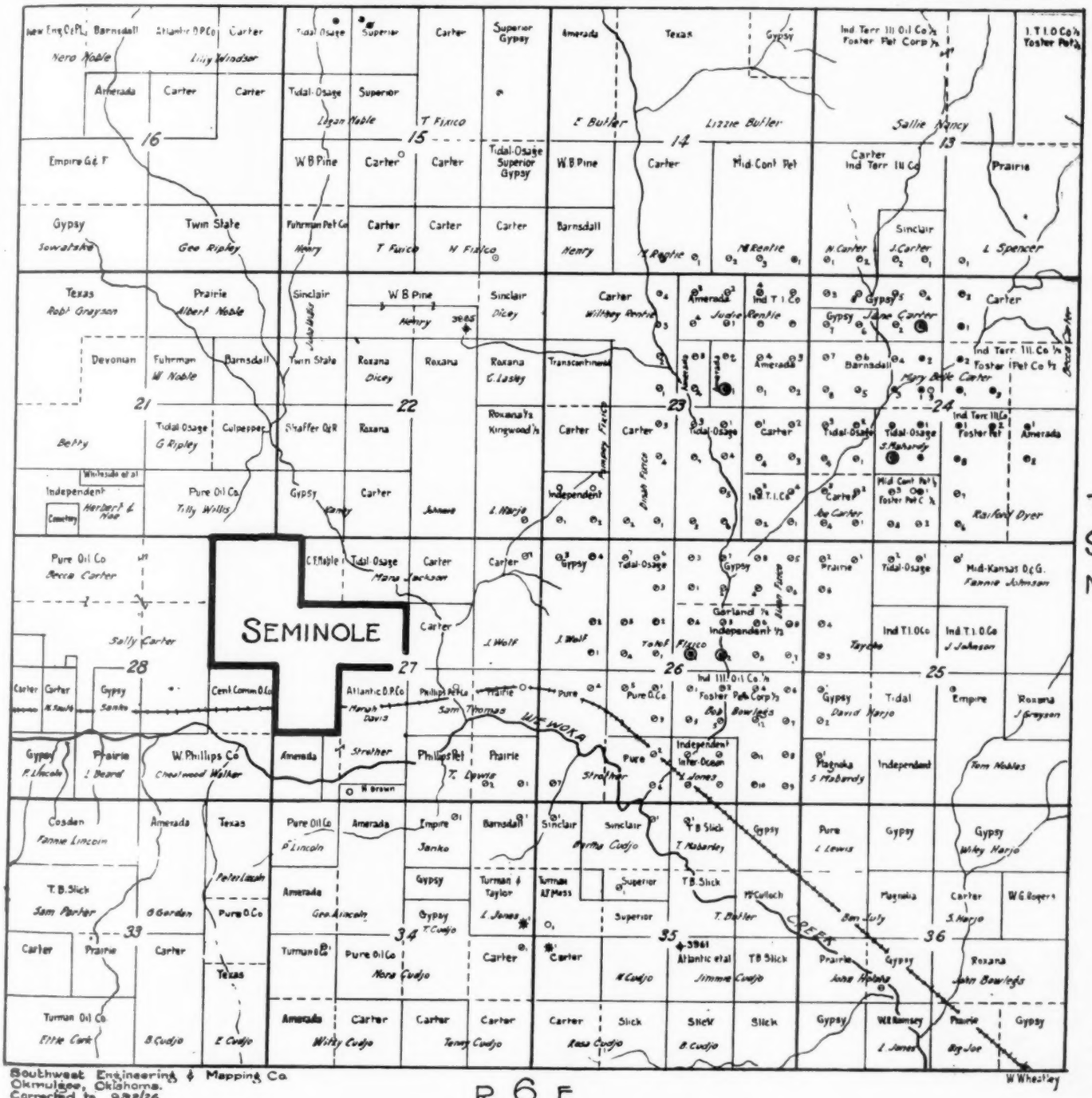
In one respect Seminole has the advantage of pools which in times past have affected the crude oil market; for neither the pool, nor the city of Seminole, nor the companies operating there have any professional "puff artists," and all opinions, beliefs, prognostications and estimates are the unbiased judgment of disinterested writers and officials who are in no way swayed by sympathies, and who voice only opinions which are based upon study and experience.

Although past performances must be considered in making estimates of what the pool will do, to some extent, it is necessary to visualize the future, for there has never been a well in central Oklahoma which has established the record that the Independent Oil & Gas Co. and R. F. Garland's No. 1 Fixico has made. This remarkable well was the discovery well in the Wilcox sand in that area, and since the time when it penetrated the sand in July, 1926, to date it has produced slightly over $1,000,000 worth of oil. It celebrated the sixtieth day of its productive life by attaining a peak production of 8,011 bbls. in 24 hours, and every barrel of this production was worth $2.61, for the oil was 40 degress gravity.

### Opened in January

The Seminole Pool may be divided into three groups. The first oil was found in this pool in January of the current year, when the Indian Territory Illuminating

(Continued on Page 128)




*The map of Seminole operations, the results of which may add another to America's 100,000-bbl. pools.*

# Geology of Important Oil Reserves

## Discussions in the Denver Meeting Devoted Entirely to Outstanding Territory Which Looks Promising

By Frank B. Taylor

DENVER, Colo., Sept. 25.—The petroleum geologists got down to real work on Tuesday at this joint meeting of the western division of the American Mining Congress, American Institute of Mining and Metallurgical Engineers, American Association of Petroleum Geologists and the American Silver Producers Association. The sessions began on Monday and ended on Thursday.

The session was opened with the paper on the Geology of Western Kansas by Glenn C. Clark of the Marland Oil Co., after a short talk by the association's new editor and secretary, J. P. D. Hull, formerly geologist for the Louisiana Oil & Refining Co. Mr. Hull outlined the plans for the coming year, a meeting to be held in Tulsa next March and one in New York on November 17. At the New York meeting there are expected to be several papers relating to developments in the foreign fields, especially in Mexico and South America and these are expected to draw considerable interest.

Mr. Clark's paper described a correlation made by him by means of well logs, from western Kansas through the Panhandle of Oklahoma. A prominent feature was the areal limiting of the Wellington salt bed as a key bed for obtaining geological data.

### On Amarillo District

J. V. Howell, another Marland geologist, presented a thesis on the Amarillo district in Texas. He reviewed the history of the field showing that the first survey was made by the Government men in collecting data for a water supply bulletin. The information so found led to the drilling of a well in 1918 and this came in as a gasser in September, 1918. Further development led to the Gulf Production Co. bringing in an oil well that started off at 250 bbls. and is now doing about 80 bbls.

The subsequent wildcatting developed considerable gas but the development was slow up to the present year, less than 100 wells being drilled to 1926. From January of 1926, however, the curve of the drilling operations rose swiftly and continued rising until in the late spring the congestion of crude caused a cessation in the drilling of the wells. The average per well for the field is 300 bbls. and at this time the field has 715 wells drilling.

The Amarillo district was surveyed by Mr. Howell and other geologists in the past few months and the east side of the field has been mapped fairly accurately with the Blaine formation as a key horizon. On the west side, however, the formations are so covered that much remains in doubt and until more wells are drilled on the west side of the field and on the south side of the axis, the correlation with the north side cannot be made accurately.

Mr. Howell concludes that there is no reason why the south side of the field should not be found productive as well as the present development on the north side. There also appears to be some relation between the production of the wells and sea level. The first oil shows come in about 150 feet above sea level and are at a different horizon from the gas. The best wells in the field find their production from 50 to 100 feet above sea level and the gas pressure remains constant at 420 pounds while the rock pressure at 3,000 feet should be 1,300 pounds. Mr. Howell concluded from this that the hydrostatic pressure of the water in the sand was just high enough to hold the pressure at 420 pounds.

This point caused much discussion in the subsequent talks on Mr. Howell's paper and many opinions differed from that of Mr. Howell while a majority accepted his views as the probable solution.

### Trip to Fort Collins

During Wednesday, the geologists were taken to the Fort Collins Field in automobiles, where the party divided, part of the cars making the circuit from one side and the rest going around the opposite way in order to avoid congestion at the points of interest. The trip through the fields was under the direction of the Union Oil Co. so that competent guides were provided to explain the structure and the workings of the wells.

On Thursday morning, the geologists again opened a regular session and the first paper was that of Dr. J. W. Beede on the Geology of Southwestern Texas, presented by Doctor von der Gracht. This paper treated of that area lying west of the great Balcones Fault and east of the Colorado River. It described particularly a great shale bed that occupies the Permian and part of the Pennsylvanian beds and just why this shale bed occurs as it does is not known.

Doctor Beede considers that the Blaine gypsum stratum is directly related to the great salt sequence that extends from the Gulf region up into Utah and this opinion was upheld by several other speakers on this and related subjects. The Permian and Pennsylvania beds in the area described have received only a small amount of study and he considers they are worth a deeper consideration as the beds will probably yield much valuable information to geology even though the area may not be productive of many oil fields. In his correlation, Doctor Beede arranged the strata in the following table:

| | | | |
|---|---|---|---|
| | Tessey | | Carlsbad |
| | Gilliam | Salt Sequence | Castile |
| | Vidrio | | Capitan |
| Permian | Ward | | Delaware |
| | Leonard | | Hueco |
| | Hess | | Yeso |
| | Wolfcamp | | Abo |
| Penna. | Gap Tank | | Magdalena |

Doctor Beede's paper was highly technical and dealt with phases that were of interest to the geological experts in the main rather than the student. The discussion was left to the older heads, and the young geologists in attendance seemed to be willing to sit still and listen rather than to engage in the discussion that followed the conclusion of this paper.

After the discussion of Doctor Beede's paper, T. S. Harrison and R. C. Coffin, names long linked with the geology of the oil fields in the Rocky Mountains, placed a paper before the convention titled The General Geology of the Rocky Mountain Region and Its Relation to the Petroleum Deposits.

### Rocky Mountain Geology

Mr. Harrison led the reading with an outline of the history of the Rocky Mountains and the movements that formed this great chain. Many of these movements are still going on to this day. At one time, the sedimentation of the plains country extended across the space where the Rockies now stand and the great faulting pushed up through this sedimentary deposition, the thrust being to the east and the subsequent erosion carried away the sedimentaries, leaving the aezoic rocks exposed.

He divided the subsequent folding that created reservoirs for petroliferous deposits into three divisions:

Laccolith domes, caused by an intrusion of lava or other rock in a molten state under the sedimentary strata and which caused the sedimentaries to rise in a dome-shaped arch.

Saline domes, as are found in the Gulf Coast region and in western Colorado and eastern Utah.

Gravitational domes, as in the Sunburst Field in Montana.

The new Cane Creek Field in Utah is considered to be a salt dome as is the Shafer Dome and several others. One outstanding feature in Mr. Harrison's talk was his discovery while surveying the domes on the Colorado River, that the river cut through the structure instead of going around. In almost every instance where an oil structure is found near a stream, the stream goes around the structure rather than cut its way through, but in the Colorado River, the opposite is true and the structures seem to offer little or no resistance to the course of the stream. Mr. Harrison concluded from this fact that the domes in the Colorado River region have been created after the river had cut its bed and through the erosion of the deep canyon of the river, the heavy weight of overlying sedimentaries which covered the great salt beds, was lifted off and the salt moved along the line of least resistance in a state of flowage to rise up in the canyon and form the structures. Doctor Harrison further proved this by examining the river farther down and there

(Continued on Page 127)

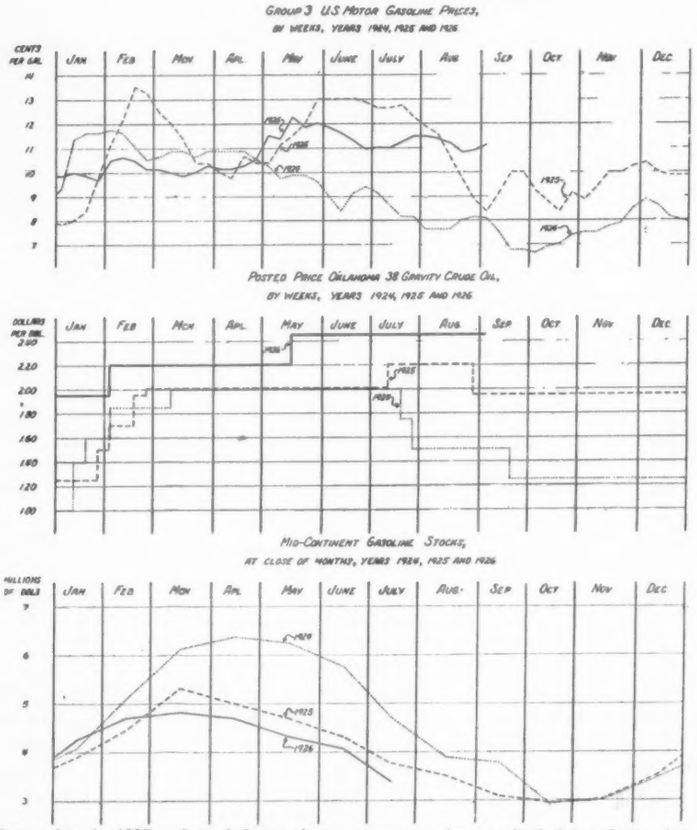
## CRUDE AND GASOLINE PRICES AND STOCKS IN REFINERS' HANDS

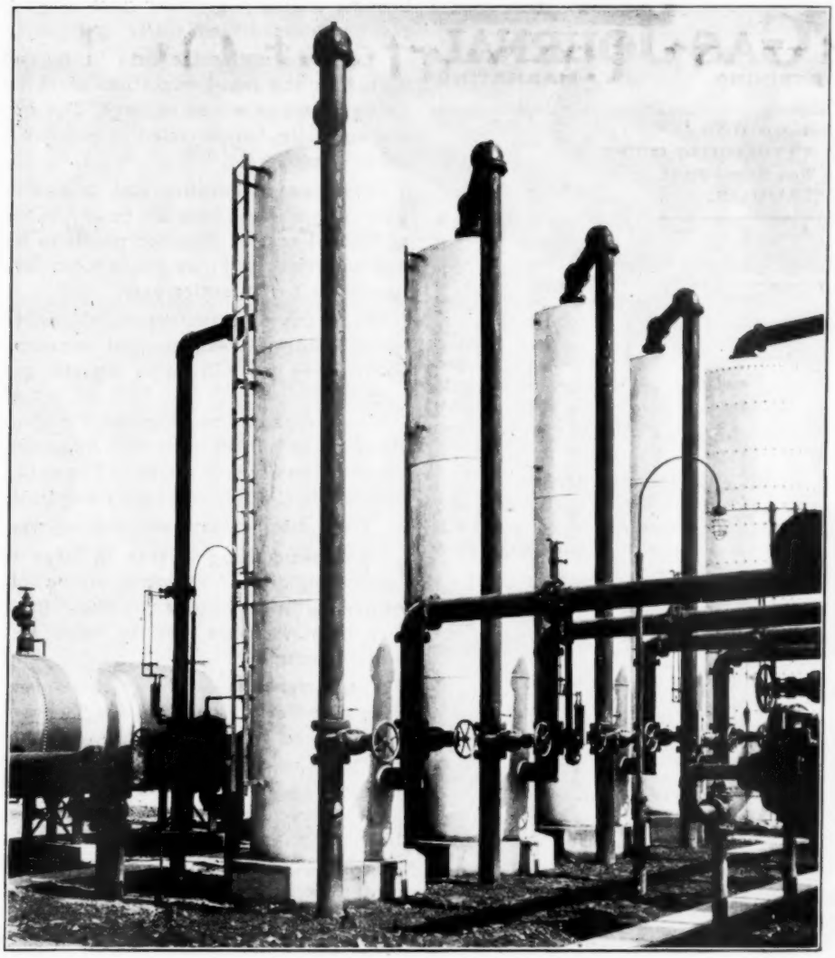
The relative situation in regard to crude prices, gasoline prices and gasoline stocks in the hands of refiners of the Mid-Continent area for the years 1924-1925 and so far this year are shown in the accompanying chart which was compiled by the Western Petroleum Refiners Association.

The chart shows that gasoline stocks so far this year have averaged slightly lower than in 1925 and much lower than the same period in 1924. Gasoline stocks in the early part of this year were slightly higher than the same period last year but since February they have consistently been based on Government reports.

In regard to prices the chart shows that both crude and gasoline quotations have been steadier than in 1924 and 1925. Crude prices have been higher this year, the 38 gravity grade being posted at $2.45 since the middle of May. This compares with a top price of $2.20 last year, a schedule which was in effect a little over a month.

Despite the higher crude prices, the average price received by refiners for gasoline is about the same as last year. Refiners, however, have obtained a greater recovery of gasoline from their crude and have also obtained higher prices for other products.


WESTERN PETROLEUM REFINERS ASSOCIATION
E. H. RITTER - ASST. STATISTICIAN
GROUP 3 U.S. MOTOR GASOLINE PRICES, BY WEEKS, YEARS 1924, 1925 AND 1926
CENTS PER GAL.
JAN FEB MCH APL MAY JUNE JULY AUG SEP OCT NOV DEC
1926
1924
1925
POSTED PRICE OKLAHOMA 38 GRAVITY CRUDE OIL, BY WEEKS, YEARS 1924, 1925 AND 1926
DOLLARS PER BBL.
MID-CONTINENT GASOLINE STOCKS, AT CLOSE OF MONTHS, YEARS 1924, 1925 AND 1926
MILLIONS OF BBLS



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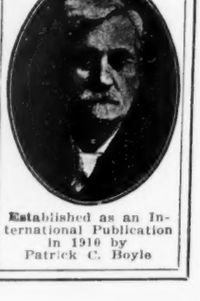

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## COMPETITION IN QUALITY

The oil industry has got through the season of 1926 so far without the competition of "distress gasoline" which broke the market so regularly in recent years that it seemed a permanent condition.

Marketers, refiners and producers also may find it to their advantage to inquire how it was avoided this year. The answer points a way to future immunity from below-cost competition.

The most striking development in the marketing of gasoline this year has been the appearance of superior gasolines and the extent to which they have been taken up by the consuming public.

This better gasoline has been made possible by increased efficiency in refinery processes, taken in connection with natural gasoline, which has given an improvement in product with less proportionate increase in cost.

It is another of the valuable advantages which the oil industry has passed along to the consumer of petroleum products already benefited by the greater skill and efficiency of the producers of crude and the greater recovery of motor fuel. Quality has been improved as well as quantity has been enlarged.

Premium gasolines are not, of course, new. There have been noted brands on the market for several years but the full possibilities were not suspected until The Texas Company began its nation-wide advertising campaign offering a "new and better" gasoline at the price of the ordinary product.

This was competition of a new kind, the competition of quality, and its effects have been the principal topic wherever marketers and refiners have gathered for discussion of distribution trends.

It removed the sale of gasoline from the level of price to that of quality and competition swiftly turned to the new point. The instant effect was to make price secondary and to reduce "distress gasoline" to an inferior position.

In the days when "distress gasoline" was flooding the market high test gasolines commanding premium prices were regarded as an accommodation for a limited clientele which demanded a superior motor fuel in the belief that it secured better engine performance. The rank and file of motorists seemed content with any fuel that would keep their motors running, the cheaper the better.

But as the public became more familiar with the internal combustion engine a growing percentage paid more attention to the results obtained from differing gasolines and oils.

This was noticeable first in regard to lubricants. It was reflected in the rapid education of motorists in the importance of changing oil at stated mileage. The improvement in car operation was so easily demonstrated in practice that it has been almost universally adopted.

The cost of gasoline and lubricating oil is, after all, a comparatively minor factor in the cost of maintaining a car. The slight additional cost of superior products lengthens the life of the car and one repair bill may easily mean far more than the cost of good lubricants for an entire year.

From paying attention to lubrication to giving like thought to better gasoline was a natural sequence. Widespread publicity regarding the possibilities of superior gasoline and improved motors helped.

The companies putting out superior gasolines, and advertising them to the public, built up a business that was not subject to the competition of price cutters. The public, educated to buy the superior product, would not take a substitute regardless of price.

The battle against price cutting was more than half won.

The same thing is true in large degree of the marketing of lubricating oils. A motoring public informed about the importance of quality in gasoline is not likely to ask for "a quart of oil" without some assurance that the lubricant to be supplied is the most suitable obtainable.

The improvements in gasoline making and government reports of a constantly better showing in average gasoline from year to year seemed at one time likely to lead the public to conclude that one gasoline was about as good as another and any advantage in price was so much gain.

The development of these superior gasolines with antiknock and high-test characteristics has changed that. It is true that the "average" gasoline is improving from year to year but that is only part of the story. There is obtainable an improvement which is far beyond that and now that the motoring public is informed about it, it is no longer content with the average.

This is the phase that offers the industry escape from the competition of mere price and robs "distress gasoline" of its power.

Incidentally, it opens the door to the future, to the coming of high-compression motors and their demand for antiknock fuel. With the public educated into buying better gasoline for its antiknock and high-test qualities there will be wider distribution of that quality of product so that as motors are improved the superior gasoline they demand will be obtainable generally.

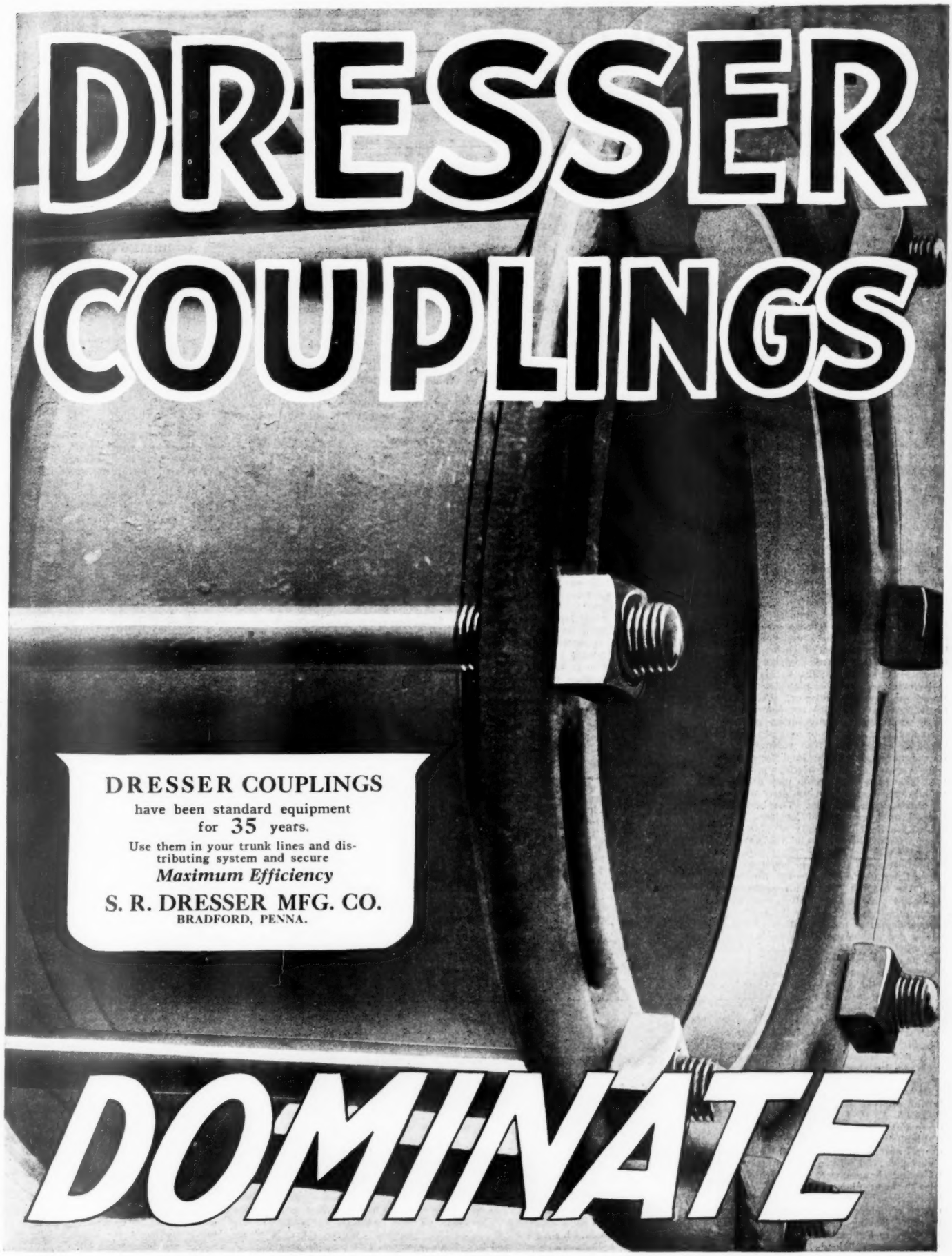
The trend is therefore doubly significant. It provides an insurance for the oil industry against the domination of price cutters and at the same time prepares for the new market to follow the improvement in motor engines.

Of course, while companies which have a quality product and make it known to the public by name and demonstrated results will have less to fear from cut-price competition on an inferior product, there is always the possibility of unscrupulous competition imitating a success and putting forward an article that in no way equals the genuine. The "just as good" competitor is known in every industry where substitution of cheaper products is possible. Instances have been known where unscrupulous dealers have sold inferior substitutes while displaying signs of reputable products.

That is a matter that should engage the immediate attention of the reputable companies in the oil business. It should be possible for them to interest the public in a campaign for protection by law of quality products which have built up a reputation on trade names or trademarks.

The public would be quick to see it is as much in the interest of the buyer and user of gasoline as of the maker and distributor that quality is maintained. Without that protection both the public and the industry would soon be back where they started, where a gallon of gasoline meant no more than a bushel of wheat so far as the average man knows of either.

If the future merchandizing of gasoline is to be a quality competition quality must be respected and protected.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# Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

*The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.*

*Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.*

*All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.*

*Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.*

## DIESEL ENGINE LUBRICATION

**Will you kindly furnish specifications for a lubricating oil suitable for use in Diesel engines?—R. G. E.**

There appears to be considerable differences shown in the properties of the oils which are used for Diesel engine lubrication. A special investigation, as reported to the Petroleum Division of the American Chemical Society, by Matthews and Norton, of a power plant using five Diesel engines is of interest. These engines were rated at 525 horsepower, directly connected to alternating generators, having a total connected peak load of 1,875 horsepower. The engines were of the two-stroke cycle, land type, and were operated at 300 revolutions per minute. This type of engine is very difficult to lubricate, as all moving parts are at all times under pressure. The lubricating oil used was a Mid-Continent base oil, with a Saybolt viscosity of 82 at 210 degrees Fahrenheit, of which the consumption was 1 gallon for 757 horsepower hours developed, this grade being recommended by the manufacturer who supplied the engines. Various remedies for inefficient working were tried, including water injection to eliminate the excessive carbon deposit in the cylinders. It was finally decided to use a special lubricating oil for the power cylinders, which was much lower in viscosity, and, therefore, had lower flash and fire points. The carbon formation in the cylinders seemed to be caused by high operating temperatures, and it was believed that an oil with a lower viscosity would bring them down. The flash and fire points of this lubricating oil were lower than had been tried before, and up to this time such oils had been considered dangerous to use. Entirely satisfactory results were obtained with an oil with the following approximate specification: Gravity, 24.5 A. P. I.; flash point, 405 degrees Fahrenheit; fire point, 460 degrees Fahrenheit; Saybolt viscosity at 100 degrees Fahrenheit, 375; at 210 degrees Fahrenheit, 56. In a 30-day test, the following changes were noted which had been brought about by the use of this lower viscosity oil as a lubricant for the power cylinder: The cooling-water temperature leaving the water jackets was 123 degrees Fahrenheit, while the engine was carrying full load, 24 hours per day. The oil consumption was reduced to 1,241 horsepower hours per gallon of lubricating oil in comparison with the original 757 horsepower hours. The authors conclude that many users of Diesel engines, and manufacturers as well, should not pay too much attention to the flash point of the oils they use, and recommend that lubricating oil manufactured from a crude produced in any of the prominent fields, with a Saybolt viscosity of from 300 to 500 at 100 degrees Fahrenheit, will give very satisfactory results. Although most operators are using an oil with a viscosity of 500 to 750, and some even higher, the lower viscosity oils give much more efficient lubrication.

## SPONTANEOUS COMBUSTION OF PETROLEUM COKE AND GAS HOUSE COKE

**Will finely pulverized dry petroleum coke and gas house coke ignite spontaneously if kept in air-tight steel storage at temperatures not exceeding 120 degrees Fahrenheit? Will these materials ignite spontaneously if kept in bulk exposed to air at temperatures not exceeding 120 degrees Fahrenheit?—K. Z.**

We have several reports of instances where petroleum coke in storage has been ignited from spontaneous combustion. The same conditions appear to apply to the storage of both petroleum coke and gas house coke with respect to favorable conditions for this kind of combustion, as have been found when coal is in storage. Just what is the cause of the autogenic heating is not known. The weather, composition, form of material, manner of piling and the length of time the coal is in storage have been investigated and found to be important factors. A high temperature would be a favorable condition to spontaneous heating.

Air-tight steel storage for pulverized coke might prove very disastrous because if the combustion should get started there might be enough air present to support it long enough for it to reach the explosive stage. Exposure to the air is considered to be much safer, with the exception, of course, of water covered storage; but storage of petroleum coke in the powdered form under water is hardly practicable.

Powdered coke is more liable to produce heat than the lumps. The extent to which air is admitted into a pile is important, because if there is free circulation of air while the material is developing heat the temperature will be kept under control due to the fact of the cooling influence of the air currents. When a pile consists of lumps and fine powder the air may get to the interior fast enough to combine with the powder, then there would be a continuous rise of temperature because the oxidation would develop heat at a faster rate than any very small volume of fresh air entering the pile could cool.

Coke and coal should not be stored in very large and very high pyramid-like piles, that is under conditions where there will be a large portion of the pile cut off from comparatively free circulation of air, but in broad layers with plenty of large lumps at the bottom. If the coke is entirely in the powdered form the size of the piles should be kept very small.

## GASES REDUCED TO LIQUID AND SOLID FORM, HELIUM LOWEST MELTING POINT

**What gases are there which have not been liquefied by the application of pressure and low temperatures?—D. R. D.**

All known gases have been prepared not only in the liquid form but have been reduced also to the solid condition. The most difficult gas to change to these forms has been helium, which is found in some natural gas and is valuable for the inflation of balloons and dirigibles. Within the last few weeks Prof. W. H. Keeson, of the University of Leyden, Holland, announced in Nature that with a temperature of 457 degrees below zero Fahrenheit, helium becomes a solid under a pressure of 26 times that of ordinary air. At a temperature of about 7 Fahrenheit degrees above absolute zero, a pressure of 140 times that of the atmosphere was needed to make the liquid gas become solid.

It was at the same laboratory in the University of Leyden that helium was first made into a liquid. This was done in 1908, by the late Prof. Kammerlingh Onnes. So difficult was this accomplishment that since that time at only one other laboratory in the world has it been repeated, that having been at the University of Toronto, Canada.

Though Professor Onnes was able to get a temperature of less than 1½ degrees above absolute zero, with liquid helium, the pressure was not sufficiently great to make it a solid. This is the lowest temperature that has ever been reached.

## FLUORESCENCE

**Is the characteristic quality of some oils to change color in different lights or degree of light due to the structure of such oils, or is it because of their chemical composition?—L. E. I.**

The property of some substances to reflect a light having a different color than their own is known as flourescence. Some solid bodies behave this way and in such cases it appears that the physical condition is responsible, for when the crystalline arrangement is destroyed there is no flourescence. However, in the case of liquids this may not be due to physical condition.

Many lubricating oils are examples of flourescence, then we have uranium glass, fluorspar, alcoholic extracts of leaves, several dyes, and very dilute solutions of sulphuric acid and quinine. These examples show a wide range in composition, so we may believe that the phenomenon must be explained as being not the result of any one class of chemical substances or a certain physical condition, but to a combination of physical and chemical properties.

The fact of fluorescence is caused by refraction of light rays, or a change in refrangibility. There are some rays which are so short that they are incapable of exciting the sense of vision, however, when these rays are caused to increase their periods of vibration they become visible as light blue in the case of the ultra violet ray and in the solution of quinine. In the case of lubricating oils the rays are visible but change their color, and this is due to the change in the direction of the ray or to the shortening of the ray.

## FUEL VALUE OF TAR AND PITCH

**Have you the fuel value of coal tar and the heavy pitch like residue from oil? Is it possible to burn these substances?—S. T. F.**

The fuel value of ordinary coal tar is between 15,500 and 16,000 B.t.u. per pound. It is used as a fuel where the conditions are favorable, but the market demand is usually such that it is more profitable to sell it and use fuel oil. The pitch-like residue from oil has a heating value of around 17,300 B.t.u.

There is no reason why both of these residues should not be burned as fuel whenever the conditions are favorable. They must be heated and strained before use, so there is the storage and transportation problem. Where there is waste heat or where it is possible as a part of the process to maintain a liquid condition, it might prove economical to burn such material.

We have seen the tar or pitch from a pressure still so handled in this way that a provoking nuisance, in the form of a rapidly growing sludge pond, was converted into a fuel saver. The tar produced a good fire without doing any harm to the auxiliary equipment.

## DRYING AGENTS

**We are troubled with rust forming on our cans and as they are expensive we want to know if there is any way to take the water out of the air so that the storage room may be kept perfectly dry?—C. T. S.**

A perfectly dry atmosphere is unknown but you no doubt have in mind freeing the air from moisture so far as your particular problem is concerned. If you have a room set aside for this one purpose it may be possible to dry the air to such an extent that there will be no rust formed within a reasonable time. The walls may be lined with steam pipes and by proper draft control an atmosphere may be maintained which will be practically free from water.

Another method, but somewhat expensive and objectionable involves the use of chemicals. Concentrated sulphuric acid will absorb large quantities of water but it must be used with considerable caution and in special vessels of lead or glass. Freshly prepared quick lime will take up water, calcium chloride and caustic soda are other substances which may be used.

These chemicals should not be used for this purpose except under the supervision of a chemist who is thoroughly familiar with their properties.

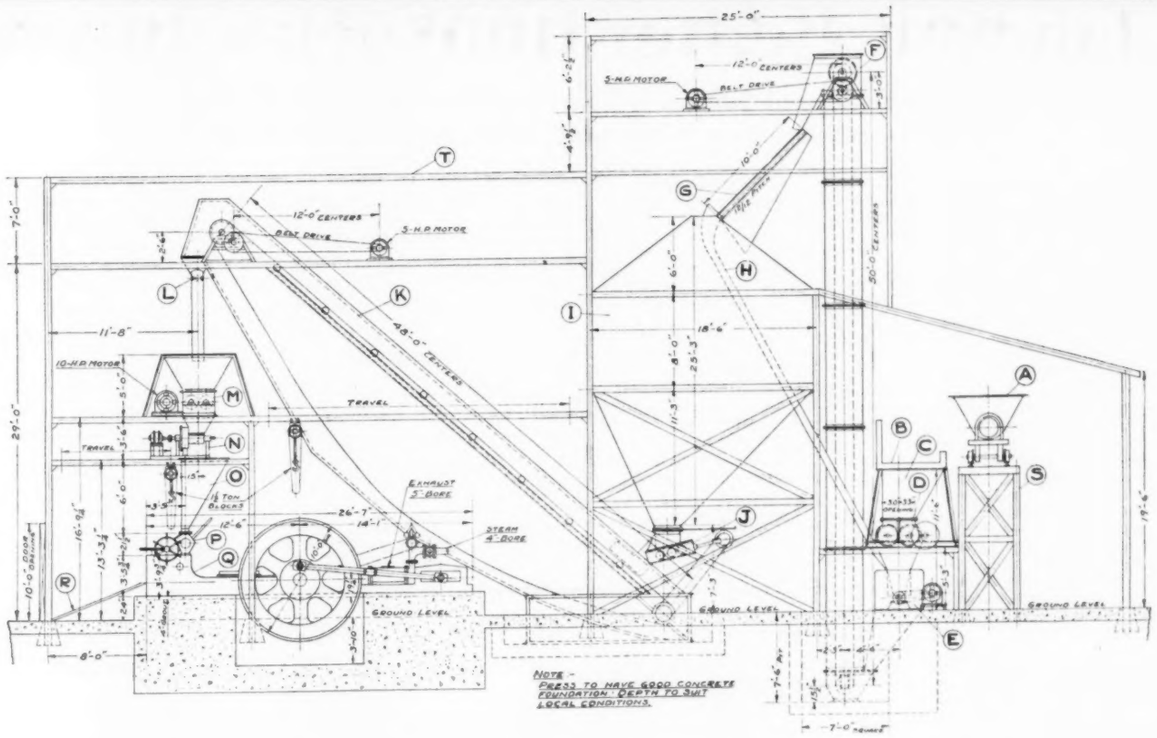
## MOTOR OIL WITH HIGH FLASH AND FIRE POINTS

**Some makes of cars are noted for their cool running qualities. In such cars is it possible to use a lubricating oil that has flash and fire points that are too high? For instance, in the winter season, will the carbon deposit on the piston heads be increased if small quantities of oil work up past the rings and the oil in question is extremely high in flash and fire characteristics?—H. J. S.**

It is not thought that the performance value of a lubricating oil may be indicated by the flash and fire points alone. There are two other properties, viscosity and pour, which are very important. Many oils having high flash and fire points have high viscosities and are therefore excellent lubricants. If the pour, or congealing point, is high there may be excessive strain on the engine when starting cold, so that the chances for leaking past the piston rings will be increased. Of course any quantity of any kind of lubricating that passes into the combustion chamber must result in the formation of more or less carbon according to the nature of the oil and the quantity present.

Flash and fire temperatures are indicators in the sense that they show when separation or decomposition begins, so when you state that the oil may have very high flash and fire points you are suggesting that the oil will decompose only when exposed to high temperatures. A heavy stable oil may not get past the rings as easily as a low viscosity oil.

It is a fact that the higher the viscosity, flash and fire, the greater number of carbon atoms in the molecule, so then when there is a larger quantity of carbon present in the heavier oil there will be a greater quantity of residue produced when the oil is burned. The temperature existing in the combustion area is certainly sufficient to carbonize the heaviest of the lubricating oils.

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| J | Rocking feeder from storage bin |
| K | Inclined belt elevator—48-ft. centers |
| L | Two-way control discharge gate |
| M | Fernholtz double shaft tempering mill—30-inch X 8-ft. |
| N | Fernholtz 24-inch granulator |
| O | Fernholtz feed bin to Briquette press |
| P | Fernholtz patented feeder |
| Q | Fernholtz patented oil coke Briquetting press |
| R | Finished Briquette chute |
| S | Wood trestle for dump cars |
| T | Building (to suit local conditions) |

The market for these Briquettes is nation-wide. Wherever fuel is needed—for domestic or industrial use—Fernholtz Briquettes are preferred. Their B. T. U. value is higher than any other commercial fuel.

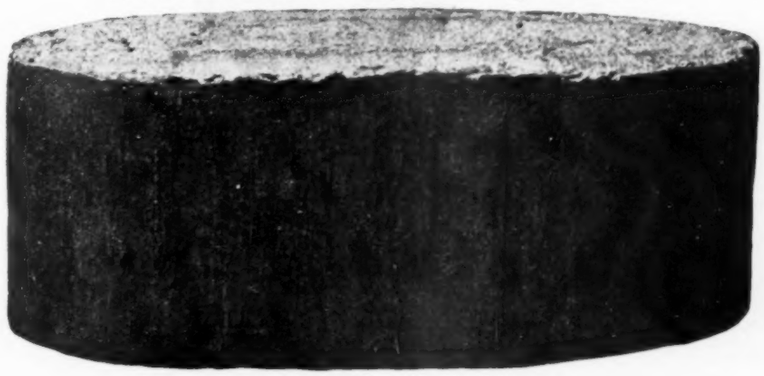
The Fernholtz Process has been accepted as the solution to the problem of disposal of waste coke residue. Refineries producing 20 tons or more of oil-coke per day can now realize greater profit and obtain highest efficiency.

*Our literature will interest you.*

## PORTER & COMPANY

*Briquetting Engineers*

718 Board of Trade Bldg., Los Angeles, Calif.



*Actual size of a Fernholtz Briquette*

# Fernholtz Briquetting Process

# Oklahoma Center of Week's Interest

## Possibilities of Seminole Engross Attention. Good Wells in North Braman Field and in Crane County, Texas

The Seminole Field in Oklahoma continues the center of attention. The drilling in of the Independent-Garland No. 2 Fixico, a location east of the Wilcox sand discovery well, was the feature of the week. It found the Wilcox 35 feet lower than the discovery well, started flowing at rate of 150 bbls. an hour and drilled itself in. It made 4,669 bbls. in the 24 hours ending Tuesday morning. The discovery well made 7,357 bbls., the total production of the five Wilcox sand wells being 21,516 bbls.

In the North Braman Field of Oklahoma the Comar Oil Co.'s No. 1 Brown, in the northeast extension of the Wilcox sand, started flowing 180 bbls. an hour.

In Sumner County, Kansas, the Twin State Oil Co.'s east offset to the Roxana discovery well swabbed 765 bbls. in 18 hours from the siliceous lime.

The best well ever completed in Crane County, Texas, was brought in by the Marland Oil Co. It came in for 62 bbls. an hour but fell off rapidly, producing about 700 bbls. Monday morning. The Gulf Co.'s No. 1 McElroy is due for a test within 10 days.

Ector County reported a showing in the Cosden No. 1-A Connell. The Westbrook test in Winkler County has a fishing job on hand. The Wichita Falls district produced nearly 100,000 bbls., Wichita County increasing 2,433 bbls. from the deep sand at Sunshine Hill, while Montague County reached a new peak of 8,155 bbls.

A new pool is reported from Brown County, south of the Fry Pool, and near the western border.

The Panhandle area is waiting for the test of cold weather. The Gulf Production Co. got a 1,000-bbl. well north of the Canadian River and a 685-bbl. producer in the Pampa area, in Gray County.

Nigger Creek, in East Central Texas, is estimated to be producing 40 per cent water and b. s. The pool produced 10,429 bbls. Sunday from 43 wells.

A 1,000-bbl. well in Urania and an extension of the Lisbon Field, in Arkansas were the high spots in those fields, outside the interest in the Walber well of the Phillips Petroleum Co. in the Lawson area, Arkansas, which gives hope of a new field.

Montana reports a prospect of extending the Sunburst area to the west.

Spindletop had a drop of 5,921 bbls. A half dozen tests are drilling deeper to the 4,244-foot sand.

In California the race to the deep sand in the Huntington Beach southwest extension is now under way. The shallow zone is likely to be passed up.

### OKLAHOMA

In the Seminole Pool, the Independent Oil & Gas Co. and R. F. Garland's No. 1 Fixico, the discovery Wilcox sand well, made 7,357 bbls. for the 24 hours ending Tuesday morning at 7 o'clock. No. 2 Fixico made 4,669 bb'ls. The Gypsy Oil Co.'s No. 2 Carter made 1,485 bbls. Amerada Petroleum Corp.'s No. 1 Killingsworth made 3,875. Tidal-Osage Oil Co.'s No. 2 Mahardy made 4,130 bbls. The total production of these five Wilcox sand wells is 21,516 bbls.

The Indian Territory Illuminating Oil Co.'s No. 1 Livingston, SE cor. NW, Section 15-8-6, had 36,000,000 feet of gas in sand touched at 2,432 feet. This well is an offset to the original well, which had 10,000,000 feet of gas in the same sand, and which made 120 bbls. of oil, 35 per cent of which was b.s.

### WEST TEXAS

FORT WORTH, Tex. Sept. 28.—Roxana Petroleum Corp.'s No. 3 Della Bowen, Upton County, east offset to the Sun Oil Co.'s No. 3 Burleson, flowed 168 bbls. the first four hours, with no water, at 2,075-77 feet. With the elevation 2,592 feet, this is a much better well than the offsets, and extends production one location eastward. The Dixie Oil Co.'s No. 8 Burleson got the first pay sands at 2,098 feet, but found salt water at 2,270 feet. It will be made a deep test, the first in the district. The Empire Gas & Fuel Co.'s No. 5 Weatherly, Section 19, Block Y, Hutchinson County, increased from 700 to 5,600 bbls. without shooting or deepening when agitated. The pay is at 2,992-3,026 feet. The McMan Oil & Gas Co.'s No. 3 Johnson Gray, Section 21, is flowing 60 bbls. hourly from 2,950-53 feet.

### ARKANSAS

SHREVEPORT, La., Sept. 28.—Natural Gas & Fuel Corp.'s No. 1 Cordell, NE cor. SW NW SE, Section 6-18-13, a southwest offset to the Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, which blew out at 2,050 feet, is making 30,000,000 feet of gas and salt water. It was bailed Tuesday morning. The sand was found at 2,650-58 feet; 2,200 feet of salt water stood in the hole without a showing of oil or gas.

### CALIFORNIA

LOS ANGELES, Calif., Sept. 28.—Miley Oil Co.'s No. 2 Pacific Electric, southwest extension of Huntington Beach, finished a few days ago, is doing 1,850 bbls. of 25 gravity oil. It came in barefooted from the deep zone at 3,834 feet.

George Getty's No. 4 Huntington, also in the deep sand extension at Huntington Beach, is just in, doing 1,700 bbls. of 25 gravity oil from 4,000 feet.

Several more deep wells are expected in the next few days. Increased production from the Ventura Avenue, Huntington Beach and Seal Beach areas is expected to increase the production of California fields to 615,000 bbls. or more per day.

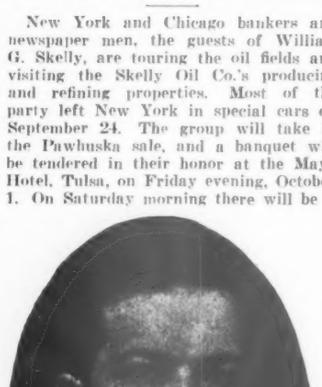
### KANSAS

In Sumner County, the Twin State Oil Co.'s No. 1 NW cor. SE, Section 17-32-2, swabbed 765 bbls. in 18 hours from the Siliceous lime. The exact sand record of the well is not available, but the Wilcox sand was touched at 3,637 feet, and, according to steel line measurement, the total depth of the well is 3,715 feet. This is a direct east offset to the Roxana Petroleum Co.'s discovery well.

North of Winfield in Cowley County, the Twin State Oil Co.'s No. 1 Goodrich, SE cor. SW SE, Section 21-31-4, had sand at 2,374-85 feet and made 200 bbls. in 15 hours.

## Financiers and News Writers Get Close-Up Of Oil Operations

New York and Chicago bankers and newspaper men, the guests of William G. Skelly, are touring the oil fields and visiting the Skelly Oil Co.'s producing and refining properties. Most of the party left New York in special cars on September 24. The group will take in the Pawhuska sale, and a banquet will be tendered in their honor at the Mayo Hotel, Tulsa, on Friday evening, October 1. On Saturday morning there will be a



WILLIAM G. SKELLY

**President of the Skelly Oil Co., who is the host on the trip through the southwestern oil fields being taken by eastern financiers and financial writers.**

sightseeing tour of Tulsa, and the party entrains for the East later that day. Mr. Skelly accompanied the trip throughout from New York, as well as other Skelly officials, including A. F. Winn, traffic manager, and Glenn Condon, director of public relations.

In Chicago on September 25 the guests were entertained at the Racquet Club by Robert Farnum, of Farnum, Winter & Co., and at a dinner for the newspaper men at the Belden-Stratford. In El Dorado, Kans., the following evening, F. A. Pielsticker, vice president of the company, gave a dinner introducing company managers and the guests, as well as prominent business men of El Dorado.

The party visited the El Dorado refinery on Monday, proceeding thence to Amarillo, Tex., where it got a first-hand look at the Panhandle fields and was given a barbecue on the Schafer ranch.

At Davenport, Okla., on Wednesday, adjacent fields were visited and a trip of inspection was made of the Skelly gasoline plants.

The party includes the following: Nelson B. Nelson, S. B. Chapin & Co., New York; Tracy Turner, Jr., S. B. Chapin & Co., Chicago; B. G. McCloud, Union Trust Co., Chicago; W. A. Stickney, Veryven & Co., St. Louis; Vaughan Spaulding, Farnum, Winter & Co., Chicago; John Coleman, Farnum, Winter & Co., Chicago; Keith Fanshier, Journal of Commerce, Chicago; George Hammond, Chicago Tribune; A. T. Ferrell, director, Skelly Oil Co.; J. S. Rollman, A. T. & S. F. R. R.; W. T. Atkins, Skelly Oil Co.; J. R. Bailey, Skelly Oil Co.; W. G. Skelly; James P. Maher, New York American; Timothy Walsh, New York World; John Hawthorne, New York Journal; E. Walter Mockler, New York Commercial and United Press; Patrick McEvoy, Journal of Commerce, New York; L. M. Fanning, The Oil and Gas Journal; Thomas Megear, director, Skelly Oil Co., New York; Frank R. Henderson, New York Rubber Exchange; Guy de Chadenedes, G. B. de Chadenedes & Co., New York; William Anderson, Block, Maloney & Co., New York; Mortimer Stern, J. S. Bache & Co., New York; David G. Wells, Palmer & Co., New York; Leroy Lance, Wall Street Journal, New York; John H. Whelen, Carstairs & Co., Philadelphia; Phillip P. Brown, Brown & Guest, New York; F. E. Gunter, Liberty Central Trust Co., St. Louis; L. C. Shafer, Jesup & Lamont, New York; Glenn Condon, Skelly Oil Co.; A. F. Winn, Skelly Oil Co., and Robert Thorn, New York Central R. R.

## MAY BE AN ALL-WINTER SHUTDOWN IN THE TEXAS PANHANDLE FIELDS

At a meeting of oil producers having interests in the Texas Panhandle held on Tuesday at which 90 per cent of the production was represented, the general sentiment was to shut down all drilling wells until spring, because of overproduction and lack of a market for the oil.

The meeting was held in the directors room of the Mid-Continent Petroleum Corp., and W. N. Davis, president of the Mid-Continent Oil and Gas Association, presided. It was an individual meeting, and had no connection with the Mid-Continent Oil and Gas Association.

The Prairie Oil & Gas Co., the Phillips Petroleum Co., and the Marland Oil Co. took the initiative in agreeing to shut down immediately all drilling wells. It was decided that in the case where operators had drilling contracts which might embarass them, to allow them to drill wells to the top of the sand and shut down at that point. The matter of shutting down wells at the nearest casing point was left to the judgment of the individual operators.

Another important outcome of the meeting was the agreement among the operators to stop shooting all Panhandle wells. This was suggested by Dana H. Kelsey, general manager of the Prairie Oil & Gas Co., and it was immediately agreed to.

The problem of shutting down the wells now drilling was settled by individual conference, the owners of properties meeting with their neighboring operators, and adjusting the territories by sections.

At the Tuesday meeting, over 100 wells were affected by the agreement and further conferences will be held Wednesday and Thursday. It is believed that as a result of these conferences, practically all of the drilling wells in the district will be shut down until spring.

### DEATH OF A. M. DAFOE

BOWLING GREEN, Ky., Sept. 25.—A. E. Dafoe, died at his home in this city Tuesday afternoon, after an illness of several months. He is the father of Worth and Percy Dafoe, local attorneys. He came from Chicago a number of years ago, when Mr. Dafoe embarked in the oil business, being the discoverer of the Tinsley's Bottom Field, of Clay County, Tennessee, where he drilled a number of large producers. He was well thought of in the oil business and made many friends who mourn his loss.

### BENZOL PRICE REDUCED

To accommodate German farmers using internal combusion engine machinery, the German Benzol Cartel of Bochum has dropped its price of BV benzol by 2 marks per 100 kilos. The Benzol-Verband is under the same administrative head as the Ammonia Sales Union, selling coke plant by-product ammonium sulphate to the farmers.

# Panhandle Waiting Cold Weather Test

## Gulf Production Co. Gets 1,000-Bbl. Well North of Canadian River and 685-Bbl. Producer in Pampa Area, Gray County

By C. D. Lockwood
*Staff Correspondent, Panhandle Field*

The period of testing which has been the cause of much speculation is close at hand, now, and the effect of cold weather on production in the Texas Panhandle can be observed shortly. Heavy rains which fell during the week end caused the shut down of numerous operations temporarily and this may be felt slightly in the production columns for next week. The past seven-day period, however, witnessed a new high mark established, the daily average estimated output having climbed 3,045 bbls. to 123,860 bbls. Hutchinson County contributed 2,840 bbls. of this increase and the other 205 bbls. was distributed among Carson, Gray and Wheeler Counties.

The new Roxana Petroleum Corp.'s No. 1 Bryan, in Section 92, Block 4, Carson County, was down to 475 bbls. Monday and was being agitated. Eleven new rigs were going up around it and the Marland Oil Co. was preparing to deepen its No. 1-B Burnett, in Section 101, Block 4. Total depth of this well is 3,114 feet and the No. 1 Bryan is producing from a pay at 3,174-80 feet.

The Gulf Production Co. brought in another good well north of the Canadian River in its No. 25 Dial, SW cor. SE NE, Section 1, Block XO2. It flowed 1,000 bbls. from lime at total depth of 2,932 feet. No. 26 Dial was flowing 60 bbls. after a shot and fishing for bailer, total depth 3,023 feet. Gulf Panhandle and Cline's No. 2 fee swabbed 222 bbls. the second 24 hours after a shot at 2,980 feet.

The Gulf Production Co. also has a good well in the Pampa Pool of Gray County. It is No. 4 Worley. It flowed 685 bbls. Sunday and 620 bbls. Monday while waiting for the erection of storage so it could be drilled in at 2,920 feet. No. 5 had a show of gas at 2,682-85 feet and was drilling at 2,710 feet; No. 3 had 40,000,000 feet of gas at 2,896-2,918 feet and was running 6-inch casing.

One of the best wells of the week in Hutchinson County was the Canyon Oil & Gas Co.'s No. 4 Whittenburg, which flowed 109 bbls. an hour following a 90-quart shot at 2,845-65 feet.

One of the large companies operating in the Panhandle offered 250,000 bbls. of crude at 81 cents this week.

**Summary of Texas Panhandle Drilling Wells Week Ending September 23**

| County— | First Reports | Drlg. Wells | S.D. |
|---|---|---|---|
| Armstrong | 0 | 1 | 0 |
| Carson | 8 | 30 | 2 |
| Childress | 0 | 1 | 0 |
| Collingsworth | 0 | 3 | 1 |
| Dallam | 0 | 1 | 1 |
| Donley | 0 | 0 | 1 |
| Gray | 5 | 95 | 7 |
| Hansford | 0 | 1 | 1 |
| Hall | 0 | 0 | 0 |
| Hartley | 0 | 7 | 3 |
| Hemphill | 0 | 4 | 2 |
| Hutchinson | 12 | 359 | 39 |
| Lamb | 0 | 1 | 0 |
| Lipscomb | 0 | 4 | 0 |
| Moore | 0 | 11 | 2 |
| Ochiltree | 0 | 3 | 1 |
| Potter | 0 | 5 | 0 |
| Randall | 0 | 1 | 0 |
| Roberts | 0 | 3 | 3 |
| Sherman | 0 | 2 | 1 |
| Wheeler | 0 | 17 | 3 |
| Totals | 25 | 549 | 69 |

### Texas Panhandle Completions

#### Carson County

Gulf Production Co.'s No. 13 Burnett, Section 116, Block 5, produced 70 bbls. from pay at 3,068-3,142 feet. Marland Oil Co.'s No. 7 Burnett, Section 107, Block 5, made 10 bbls. at 2,982-85 feet, total depth 3,030 feet. W. W. Silk and others' No. 1 Burnett, Section 115, Block 5, was shot with 50 quarts at 3,140-63 feet, total depth 3,180 feet, and made 30 bbls.

#### Gray County

Magnolia Petroleum Co.'s No. 6 Merten, Section 82, Block 3, was shot with 100 quarts at 2,938-70 feet, after plugging back from 3,068 feet, and the result was a 50-bbl. well; No. 9 Merten had 500 feet of oil in the hole from granite wash at 3,031-50 feet. McMan Oil & Gas Co.'s No. 1 Worley & Reynolds, Section 83, Block 3, produced 460 bbls. from granite wash at 2,953-74 feet. Wilcox-Pampa Oil & Gas Co.'s No. 6 Worley & Reynolds, Section 62, was flowing 20 bbls. an hour from granite wash at 2,938-55 feet, total depth 2,965 feet and may be deepened; No. 8 had 200 feet of oil in the hole at 2,963-80 feet; No. 12 produced 75 bbls. from sandy lime and granite wash at 2,950-3,014 feet. Young and others' No. 1 A. Holmes, SE cor. NE, Section 106, Block 3, in northwestern edge of Pampa Pool, had 2,000 feet of oil in the hole at 3,100-66 feet.

#### Hall County

Midwest Drilling Co.'s No. 1 G. M. Bass was abandoned in red shale at 2,003 feet, contract depth.

#### Hutchinson County

Amerada Petroleum Corp.'s No. 3 J. A. Whittenburg, Section 21, Block 47, was shot with 50 quarts at 2,915-65 feet and made 90 bbls. It was then reshot with 300 quarts at 2,900-65 feet and was cleaning out; No. 5, formerly shot with 50 quarts at 2,982-3,032 feet, making 30 bbls., was reshot with 300 quarts at 2,969-3,032 feet and bridged 1,200 feet off bottom.

Badger Oil Co.'s No. 2 Tom Lewis, Section 5, Block M-23, was completed for 150 bbls. flowing after a 180-quart shot at 2,889-2,994 feet. Canyon Oil & Gas Co.'s No. 4 J. A. Whittenburg, Section 12, Block Y, was shot with 90 quarts at 2,845-65 feet and was flowing 100 bbls. an hour, total depth being 2,955 feet. Empire Gas & Fuel Co.'s No. 5 J. F. Weatherly, Section 19, Block Y, was flowing 700 bbls. at 2,992-3,026 feet; No. 7 was shot with 120 quarts at 2,980-3,040 feet, total depth 3,057 feet and flowed 400 bbls. Harvey Oil Co.'s No. 1 W. R. Harvey, Section 33, Block M-21 was dry and abandoned at 3,202 feet. Dan A. Japhet's No. 3 Smith, Section 11, Block Y, was flowing 200 bbls. while drilling at 2,730 feet in pay topped at 2,688 feet.

Marland Oil Co.'s No. 6 Johnson-A, Section 70, Block Y, was shot with 40 quarts at 2,969-89 feet total depth 2,990 feet, and made 200 bbls.; No. 8 J. A. Whittenburg-A, in the Mary Whitley Survey north of Section 20, was shot with 10 quarts at 2,995-66 feet and flowed 1,100 bbls. S. D. McIlroy's No. 2 Smith, Section 14, Block Y, was shot with 100 quarts at 2,960-3,004 feet and made 800 bbls. McMan Oil & Gas Co.'s No. 8 Smith, Section 5, Block Y, was shot with 220 quarts at 2,727-84 feet, making 400 bbls. afterward; No. 3 Johnson-Ray Wheatley, Section 66, Block 46, made 80 bbls., 25 per cent water, after a 210-quart shot at 2,680-2,749 feet.

Minnehoma Oil Co. and Kistler's No. 1 Johnson, Section 20, Block Y, flowed 200 bbls. after a shot of 40 quarts at 2,981-3,020 feet, total depth 3,049 feet. Phillips Petroleum Co.'s No. 1 Johnson-Neil, Section 68, Block 46, was spraying 10 bbls. while fishing for tools at 2,704-20 feet. McMillan's No. 3 J. A. Whittenburg was flowing and swabbing 400 bbls. at 2,863-94 feet.

Prairie Oil & Gas Co.'s No. 15 Johnson-A, Section 21, Block Y, was flowing 240 bbls. from lime at 2,876-2,962 feet. Relief Oil Co.'s No. 4 Smith, Section 11, Block Y, flowed 800 bbls. after a shot of 220 quarts placed at 2,732-90 feet, total depth 2,800 feet. Henry Riley's No. 1 Smith, Section 12, Block Y, made 300 bbls. at 2,665-2,750 feet. Spring Creek Oil Co.'s No. 4 Smith, Section 5, Block Y, was shot with 290 quarts at 2,691-2,753 feet, total depth 2,793 feet, and made 400 bbls. White Eagle Oil & Refining Co.'s No. 2 Johnson, Section 64, Block 46, was shot with 100 quarts at 2,683-2,717 feet and made 250 bbls.; No. 8 made 100 bbls. when shot with 280 quarts at 2,664-2,736 feet, total depth 2,752 feet; No. 1 E. V. Hedgecoke flowed 460 bbls. natural at 2,785-2,892 feet; No. 3 flowed 440 bbls. natural at 2,845-80 feet; and No. 4 flowed 200 bbls. natural at 2,770-98 feet.

#### Texas Panhandle Wildcats

##### Armstrong County

Red Hill Corp.'s No. 1 Puckett Brothers, drilling 1,165 feet, found pocket of noninflammable gas at 1,120.

##### Carson County

Amatex Development Co.'s No. 1 E. S. Polling, shut down at 2,190 feet. Section 22, Block Y-2. American Refining Co.'s No. 8 Burnett, drilling 2,465 feet, Section 115, Block 5; No. 10, drilling 2,612 feet, Section 115, Block 5. Empire Gas & Fuel Co.'s No. 1 Burnett, drilling at 3,085 feet, Section 127, Block 5. W. A. Gamble's No. 1 Deeds, rig, Section 69, Block 2. Gibson Oil Corp.'s No. 1 G. W. Witter, drilling 2,020 feet, Section 1, Block 7. Gulf Production Co.'s No. 17 Burnett, Section 128, Block 5, drilling at 2,905 feet; No. 18, drilling at 2,450 feet, Section 116, Block 5; No. 19, 2,630 feet, Section 106, Block 5; No. 20, cleaning out at 2,080 feet, Section 116, Block 5. Humble Oil & Refining Co.'s No. 1 Burnett, Acct. 3, drilling 1,065 feet, Section 127, Block 5; No. 1 Burnett Acct. 4, drilling 1,230 feet, Section 12 Block 4. M. & M. Drilling Co.'s No. 1 Moore, location, Section 10, Block 5. Magnolia Petroleum Co.'s No. 3 Burnett, drilling at 2,325 feet, Section 115, Block 5. Marland Oil Co.'s No. 2-A Burnett, shut down at 3,145 feet, Section 127, Block 5; No. A-5 Burnett, drilling 2,955 feet, Section 127, Block 5; No. 6-A, drilling 2,146 feet, Section 116, Block 5; No. 7-A spudding, Section 116, Block 5; No. 1-B, rigging up to drill deeper, Section 101, Block 4; No. 2-C, drilling 2,440 feet, Section 105, Block 5; No. 3-C drilling 2,350 feet, Section 105, Block 5; No. 1-E, drilling 510 feet, Section 117, Block 4. Navajo Oil Co.'s No. 1 E. S. Polling, spudding, Section 22, Block Y-2. Nunn-McAuley's No. 1 Bryan, rig, Section 107, Block 4. Prairie Oil & Gas Co.'s No. 1 Deahl, underreaming 2,460 feet, Section 5, Block 5. Republic Production Co.'s No. 1 C. R. Garner, drilling 2,705 feet, 1,070,000-000 gas, top 2,640 feet, Section 103, Block 4. Roxana Petroleum Corp.'s No. 1 Bryan, total depth 3,178 feet, 60 bbls. an hour. The Texas Company's No. 5 Burnett, spudding, Section 89, Block 5; No. 9, spudding, Section 127, Block 5. White Deer Oil Co.'s No. 1 Jordan, Brown and others, drilling 2,870 feet, Section 114, Block 4.

##### Childress County

Gibson Oil Corp. and others' No. 1 Smith, cleaning out 2,504 feet, J. Gregg Survey.

##### Collingsworth County

Gibson Oil Corp.'s No. 1 Williams and others, drilling 1,500 feet, Section 5, Block 13. Harmon & Reams' No. 1 Wilson (Scott) location, Section 44, Block 21. Martin and others' No. 1 T. V. Norwood, shut down at 810 feet, Section 30, Block 16. Von Allman's No. 1 McDowell rig and tools, Section 107, Block 22.

##### Cochran County

J. C. Whicker's No. 1 Landon, rig.

##### Dallam County

Dalhart Oil & Gas Co.'s No. 1 James, shut down at 2,865 feet, Section 9, Block 47½. James and others' No. 1 fee, drilling 2,870 feet, Section 9, Block 47½. Wood & Wood's No. 1 Woods, spudding, Section 19, Block 17.

##### Donley County

A. T. Drilling Co.'s No. 1 Boyce, shut down at 350 feet, Section 39, Block C-3; No. 1 F. E. Harrington, shut down at 180 feet, same section.

##### Gray County

Archer, Blake and others' No. 1 Furneaux spudded and shut down, Section 111, Block B-2. Bay Shore Oil Co.'s No. 1 C. W. Bradford, shut down at 2,643 feet, Section 148, Block B-2. Blackwell & McGee's No. 1 Bowers, 12 and 15-inch casing stuck at 335 feet, Section 92, in Block B-2. Canyon Oil Co.'s No. 1 Jackson estate, drilling 1,400 feet, Section 60, Block B-2. Constantine and others' No. 1 Dial, drilling 1,925 feet, Block 25. Cranfill Brothers' No. 1 T. B. Noble, drilling 2,160 feet, Section 10, Block A-6. Eagle Creek Oil Co.'s No. 1 J. Hopkins, spudded and shut down, Section 66, Block B-2. H. B. Ellers' No. 1 Kruse, rig on ground, Section 12, Block 25. Empire Gas & Fuel Co.'s No. 1 Benton, drilling 3,250 feet, Section 64, Block 3; No. 1 B. Hughey, drilling 2,940 feet, Section 129, Block 3; No. 1 J. J. Wall, drilling 2,005 feet, Section 161, Block 3. Jack Greenwood and others' No. 1 H. B. Lovett, drilling 800 feet, Section 26, Block B-2. Gulf Production Co.'s No. 1 Merten, drilling 3,015 feet, set 8-inch at 2,685 feet; No. 1 McConnell had 30,000,000 feet of gas at 3,072 feet, running 6-inch; Haughn and others' No. 1 A. J. Daur, cellar, Section 237, Block B-2. Magdalene Oil Co.'s No. 1 Williams, shut down at 85 feet, Section 17, Block 1. Nabob Oil Co.'s No. 1 J. S. Morse, fishing 1,915 feet. Pampa Oil Co.'s No. 1 W. R. Campbell, drilling 715 feet, Section 90, Block 3. Phillips Petroleum Co.'s No. 1 H. M. Davis, drilling 975 feet, Section 86, Block 3. Henry Riley's No. 1 J. M. White, rig shut down for water, Section 212, Block M-2. Roxana Petroleum Corp.'s No. 1 B. E. Finley, drilling 900 feet, B. E. Chaney Survey. Shamrock Petroleum Co.'s No. 2 Merten, drilling 2,670 feet, Section 82, Block 3. The Texas Company's No. 1 C. W. Saunders, cementing 8-inch at 2,518 feet; No. 2, drilling 2,518 feet, Section 81, Block 3, Travis and others' No. 1 Back, rig on ground, Section 44, Block 25. Upham Gas Co.'s No. 1 W. E. Grammage, location, Section 4, Block 25. Weir, Gribbs & Finklea's No. 1 B. F. Talley, spudded and shut down, Section 114, Block M-2. Young and others' No. 1 Holmes, pay 3,060-66 feet, 2,000 feet of oil, total depth 3,166 feet.

##### Hall County

Midwest Drilling Co.'s No. 1 C. M. Bass, shut down at 2,003 feet.

##### Hansford County

F. W. Dillard and others' No. 1 F. A. Davis, Section 50, Block 2, spudded and shut down. Oklavania Oil Co.'s No. 1 Whitson, drilling 700 feet, Section 2.

##### Hartley County

Deep Rock Oil Co.'s No. 1 Layman & Balfour, shut down at 1,460 feet, Section 9, Block 2. Dorning and others' No. 1 A. C. Ashby, location. Eslick and others' No. 1 J. B. Irving, drilling 1,105 feet, Section 13, Block 13. W. W. Holmes' No. 1 G. B. Coats, drilling 590 feet, Section 58, Block X-R. Humble Oil & Refining Co.'s No. 1 J. M. Shelton, drilling 1,265 feet, Section 63, Bravo Subdivision. Kork Oil Co.'s No. 1 Shelton, spudded and shut down, Section 1, Block B-8. J. B. McKanna's No. 1 E. S. Collins, spudding, Section 3, Block L-8; No. 1 Frances Farwell and others, rigging up, Section 10, Block 22; No. 1 Capitol Lands, shut down and rig up, Section 22,

(Continued on Page 128)

# Crane County Completes Its Best Well

## Marland Test Starts 62 Bbls. an Hour. Cosden Has Showing in Ector County. Wichita County Output Climbs

By C. D. Lockwood
*Staff Correspondent, North Texas Fields*

FORT WORTH, Tex., Sept. 27.—West Texas added another excellent producer, a record breaker for Crane County, and an Ector County wildcat had a showing of oil; Jones County's only producer continued to flow more than 900 bbls. daily; the Wichita Falls district established a production mark almost equal to its record during the Burkburnett boom of 1919; Montague County also set another high figure for itself; a new pool was opened in Brown County, about 1½ miles southwest of the Fry Pool near Thrifty; and several completions of gusher size were added to the Turbeville Pool of Archer County, and the deep sand district of Sunshine Hill in Wichita County. This, in brief, represents the developments of one week in north and west Texas.

The Crane County producer was Marland Oil Co.'s No. 1-D Hughes, a mile north of production on the Durham land, and located in the SW cor. Section 88. It came in for 62 bbls. an hour and produced 1,304 bbls. when it came in the middle of last week, none of which was water and only about one-fourth of 1 per cent of which was b.s. The sand was encountered at 2,320-40 feet. While this well fell off rather rapidly, it was still producing about 700 bbls. Monday and was still the best well ever completed in Crane County, although provision must be made for a possible exception in the Gulf Production Co.'s No. 1 J. T. McElroy, located about 7 miles north of the new well, and which has not been fully tested because of storage difficulties. The McElroy well will probably get a test within the next 10 days as one of the Gulf's two 80,000-bbl. tanks is nearing completion in the NE of Section 202, and should be ready by October 5.

The pipeline conditions in west Texas are rapidly becoming as bad as those in the Panhandle. Marland Oil Co. has served notice on operators out there that no more oil can be run after this Friday, except to storage. Numerous tests nearing the pay levels will probably have to be shut down, as several are shut down already.

**Showing in Ector County**

The J. S. Cosden Co.'s No. 1-A Connell, in southern Ector County, which has attracted a great deal of attention because it found the big lime higher than other tests in the vicinity, created something of a sensation during the past week when a little free oil was reported at 3,283 feet. It drilled ahead, however, and at 3,365 feet encountered a showing of gas. It was shut down temporarily for orders on Monday, at 3,375 feet. This will undoubtedly encourage further drilling in Ector County even though the No. 1-A fails to find anything further below its present depth.

Johnston & McCamey's No. 1 Shirk, in the NW cor. SE. Section 35, Block 1, M. K. T. Survey, Upton County, found a rainbow showing at 2,215 feet. This well has been taken over by the Wentz Oil Corp.

**Fishing in Winkler County**

Another west Texas well that aroused interest was the Winkler County wildcat of Westbrook and others, which caused so much excitement for a number of weeks while efforts were being made to complete it as a producer at 2,525 feet. These efforts were finally abandoned and the hole was deepened. At 2,560-94 feet, the bit encountered more salt and early this week a fishing job was in progress at 2,602 feet.

The Wichita Falls district, as previously mentioned, came near to reaching its former heights of glory when it produced 99,854 bbls. daily during the past week. In December of 1919, when the Burkburnett Townsite and northwest extensions were going strong, the district produced 102,206 bbls., of which 92,098 bbls. daily came from the two pools mentioned. During the past week, Montague County climbed 674 bbls. over its record of the previous week to a new peak of 8,155 bbls. Wichita County, however, provided the greatest boost for the district, having increased 2,433 bbls. due to the deep sand at Sunshine Hill.

Brown County's new pool opener is A. H. Bowers' No. 1 Eads, in the SE cor. of Jeremiah Day Survey No. 636, about 1½ miles southwest of the Fry Pool and near the western line of Brown County. The well made one head from sand at 1,316-18 feet and was pulling the 10 inch with a hole full of oil. It is estimated good for 50 bbls. or more as it stands.

**NORTH TEXAS COMPLETIONS**

**Archer County**

American Refining Co.'s No. 4 Turbeville was dry and abandoned at 1,603 feet; No. 5 Turbeville swabbed 300 bbls. at 1,499-1,510 feet. Atlantic Oil Producing Co.'s No. 1 Logan was dry and plugged at 1,603 feet. Gates and others' No. 11 Thomas made 55 bbls. at 1,158-80 feet. Hill and others' No. 17 Thomas was a 44-bbl. well at 1,148-67 feet; No. 1 Andrews was dry and abandoned at 991 feet. T. F. Hunter's No. 1 Parrish made 70 bbls. at 1,638-44 feet.

Kentucky Oil Co. and Empire Gas & Fuel Co.'s No. 1 McCrory-C had a small show of oil at 1,440-53 feet but not enough to produce. Marland Oil Co.'s No. 6 Turbeville pumped 200 bbls. of water and 1 bbl. of oil at 1,511-18 feet. No. 4 Thomas-B was shot with 5 quarts at 1,165-83 feet and made 72 bbls. Marland Oil Co., Bass & Dillard's No. 1 Perkins and others' total depth 1,766 feet, plugged back to 1,765 feet, bailed about 15 bbls. of oil and 50 bbls. of salt water from sand at 1,763-64½ feet. Murchison & Fain's No. 3 Logan-B made 15 bbls. at 1,117-31 feet.

McCarty Oil Co.'s No. 3 Duke Parrish, was good for 20 bbls. at 1,575-84 feet; No. 4 Parrish Brothers made 35 bbls. at 1,585-1,600 feet. Petroleum Producers Co.'s No. 1 Turbeville swabbed 435 bbls. in 12 hours at 1,489-1,522 feet. Plains Production Co.'s No. 1 Turbeville was estimated at 40 bbls. an hour from sand at 1,489-92 feet, total depth 1,520 feet. Pandem Oil Corp.'s No. 8 Thomas was a 40-bbl. well at 1,142-65 feet.

Roxana Petroleum Corp.'s No. 5 Abercrombie & Taylor swabbed 250 bbls. at 1,336-57 feet; No. 6 Kreeger was dry and abandoned at 1,500 feet. Schermerhorn Oil Co.'s No. 1 Prideaux was shot with 20 quarts at 670-84 feet and made 20 bbls. Simms Oil Co. and Burns' No. 3 Turbeville made 15 bbls. at 1,010-19 feet. Sun Oil Co.'s No. 4 Brown made 4 bbls. at 1,273-78 feet.

The Texas Company's No. 14 Richardson was dry and abandoned at 1,502 feet; No. 7 Turbeville-C was swabbing and flowing 1,000 bbls. at 1,498-1,526 feet; No. 8 swabbed 1,020 bbls. September 20, and 1,035 bbls. the next day from sand at 1,494-1,522 feet; No. 9 swabbed 850 bbls. at 1,491-1,520 feet. Texhoma Oil & Refining Co.'s No. 16 Hamilton pumped 25½ bbls. of oil and 13½ bbls. of water at 1,808-11 feet; No. 3 Kemp & Kempner, Block 63, pumped 121 bbls., no water, at 1,793-94 feet. Tidal Oil Co.'s No. 1 Farmer swabbed 35 bbls. at 1,474-77 feet. Underwood Drilling Co.'s No. 1 Ward was dry and abandoned at 1,004 feet. Wanderer Oil Co., Perkins & Cullum's No. 1 Turbeville had sands at 1,496-98 and at 1,501-07 feet, swabbing 250 bbls. in 24 hours, and pumping 100 bbls. in 12 hours. Lee Wilson's No. 1 Prideaux made 27 bbls. at 590-623½ feet.

**Brown County**

Amerada Petroleum Corp.'s No. 1 Fry made 330 bbls. at 1,305-11 feet. Bradstreet's No. 1 Scout had a good show of oil and gas at 1,158-69 feet. J. S. Cosden's No. 5 Elmo Williams was shot with 20 quarts at 1,128-49 feet and made 35 bbls. Humble Oil & Refining Co.'s No. 3 Fry made 125 bbls. at 1,314-18 feet; No. 4 also produced 125 bbls. at 1,312-17 feet; No. 7 Hodnett was shot with 20 quarts at 1,150-1,205 feet and made 300 bbls.; No. 9 E. P. and W. H. Kilgore was good for 10 bbls. at 1,166-77 feet; No. 10-B E. P. and W. H. Kilgore was dry and abandoned at 1,200 feet; No. 9-C made 150 bbls. at 1,180-1,210 feet; No. 7-D produced 40 bbls. at 1,151-69 feet; No. 4 Wooldridge was shot with 50 quarts at 1,244-74 feet and pumped 40 bbls. afterward. Kone Production Co.'s No. 3 Foster made 35 bbls. at 1,-185-1,210 feet.

William Lester's No. 5 Fry topped sand at 1,307 feet and was flowing by heads estimated at 150 bbls. daily; No. 1-A Fry found water in sandy shale at 1,375-1,400 feet and was still drilling. McKenna and others' No. 13 Foster was shot with 150 quarts at 1,178-1,204 feet, total depth 1,206 feet and made 150 bbls.; No. 15 Foster was good for 250 bbls. after a 30-quart shot at 1,155-89 feet, total depth 1,191 feet. Magnolia Petroleum Co.'s No. 1 Fry had a good showing at 1,322-24 feet and was drilling ahead. Moore and others' No. 1 Teague had a sand estimated at 1,251-58 feet and after a 20-quart shot was estimated good for 25 bbls. Sinclair Oil & Gas Co.'s No. 1 Shore made a head after a 20-quart shot at 1,207-34 feet, then bridged. Smith Oil Co.'s No. 1 Cason & Grantham pumped 12 bbls. at 1,220-42 feet. Wentz Oil Corp.'s No. 1 Shore was dry and abandoned at 1,603 feet.

**Callahan County**

Amerada Petroleum Corp.'s No. 5 Long made 35 bbls. at 1,387-1,410 feet. Cranfill & Reynolds' No. 4 Henderson was a 25-bbl. well at 1,381-96 feet; No. 5 Henderson made 20 bbls. at 1,380-95 feet. J. K. Hughes Development Co.'s No. 1 Powell & Leggett was dry and abandoned at 2,611 feet. Prairie Oil & Gas Co.'s No. 4 Bond was shot with 20 quarts at 1,387-1,406 feet and made 60 bbls.; No. 7 Cunningham made 4 bbls. at 1,-400-08 feet. T. B. Slick's No. 2 McDonough was good for 20 bbls. at 1,385-1,412 feet.

**Clay County**

Richardson Brothers' No. 1 Barry was dry and abandoned at 1,000 feet.

**Coleman County**

Bradstreet and others' No. 1 Teagle had 2,000,000 feet of gas in top of sand at 1,220 feet and was drilling. Humble Oil & Refining Co.'s No. 1 Weathered was dry and plugged at 1,610 feet. Texas Pacific Coal & Oil Co.'s No. 1 Munger was dry and abandoned at 1,550 feet.

**Cooke County**

Lanier and others' No. 6 Hyman swabbed 6 bbls. in 12 hours at 1,196½-84 feet. Lynch, Stahl & Burris' No. 1 Danglemeyer pumped 51 bbls. in 17½ hours after the bridge was drilled out and 45 bbls. the second 24 hours. It had broken sand at 796-802 feet and oil sand at 802-06 feet.

**Eastland County**

Barkley & Crotty's No. 1 Hill was shot with 100 quarts at 2,942-72 feet, total depth 2,997 feet and had a small show of oil and gas as a result. It was cleaning out. Navarro Oil Co.'s No. 1 Clark had water sand at 1,688-1,700 feet and was dry and abandoned at 1,706 feet. World Oil Corp.'s No. 1 Cove had no results from a 90-quart shot placed at 2,858-2,928 feet.

**Jack County**

Buttram Petroleum Co.'s No. 5 Preston flowed 110 bbls. from sand at 2,024-32 feet.

**Mills County**

Gregory Brothers' No. 1 Weston was plugged and abandoned after a shot of 40 quarts at 1,765-75 feet, total depth 1,846 feet. It had about 1½ bbls. of 53 degrees gravity oil after the shot.

**Montague County**

F. H. E. Oil Co.'s No. 2 Howard-B

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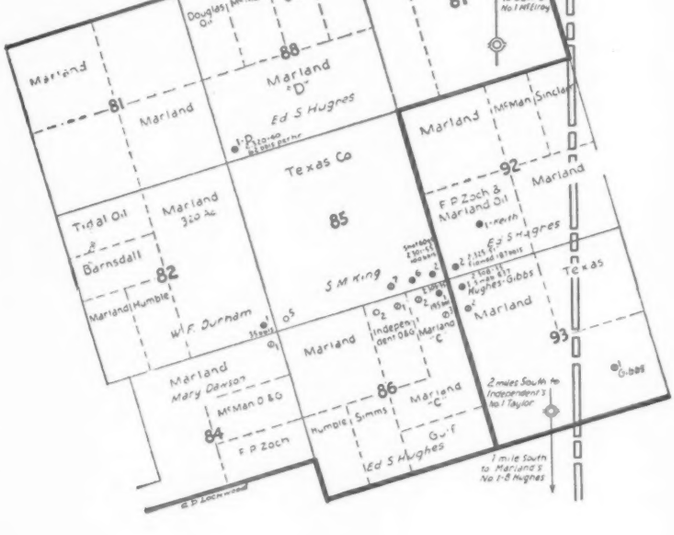

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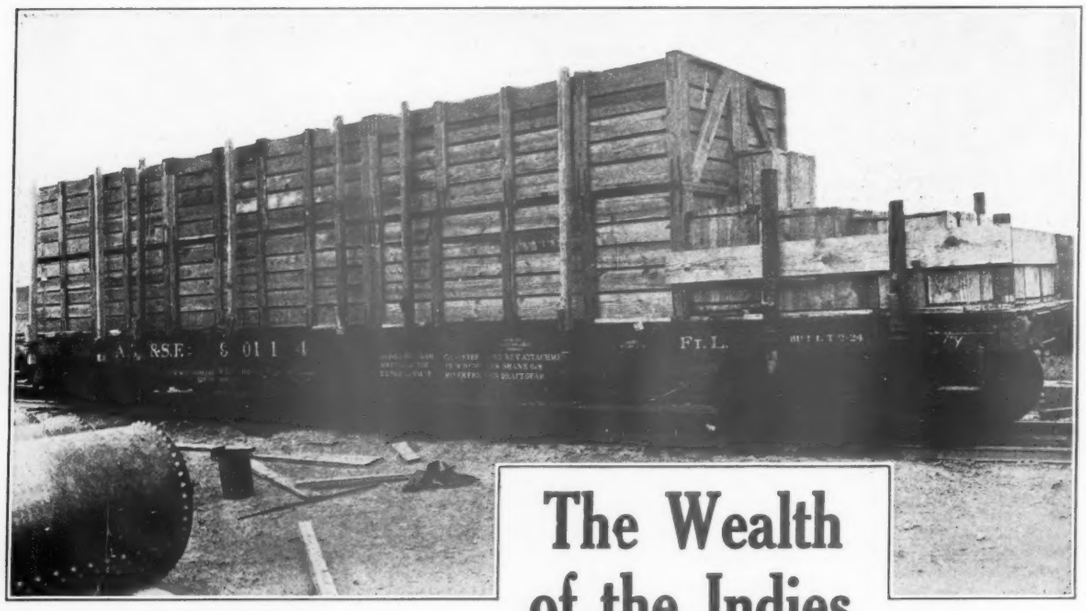

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# New Seminole Well Makes 4,456 Bbls.

## Found Wilcox Sand 35 Feet Lower Than Discovery Well and Started Flowing 150 Bbls. an Hour, Drilling Itself In

By J. L. Dwyer
*Staff Correspondent, Oklahoma Fields*

The Seminole Pool continues to be the most active and most interesting spot in the Oklahoma fields at present. During the past week, several developments have occurred to bring additional interest to this field and on Monday morning of this week, the daily production passed the 30,000-bbl. mark.

Out of 31,183 bbls. which the pool produced, the five Wilcox sand wells made 22,439 bbls., a very fine average.

The interesting developments of the week at Seminole were, the drilling in of the Independent Oil & Gas Co. and R. F. Garland's No. 2 Fixico, one location east of the discovery Wilcox sand well. The No. 2 Fixico, is SE cor. SW NE, Section 26-9-6, and it found the Wilcox sand 35 feet lower than No. 1 Fixico. This sharp drop which was found in a distance of 660 feet is of unusual interest when it is considered that the well started flowing at the rate of 150 bbls. an hour, and gradually drilled itself in. On Sunday morning, it showed a production of 3,400 bbls., and this was not a full 24-hour gauge. On Monday morning, the 24-hour gauge registered 4,456 bbls., and it is only 3 feet into the sand.

Owing to finding the pay low, it is believed that the owners will not drill the well any deeper, as deeper drilling has caused the intrusion of salt water in one of the wells in the pool.

### North Braman Well

The only other big well to be recorded during the week was at North Braman, in Kay County, just below the Kansas-Oklahoma line. In this field the Comar Oil Co.'s No. 1 Brown, in the northeast extension of the Wilcox sand, found sand at 3,387-3,401 feet and started flowing 180 bbls. an hour. This is a direct offset to the Mid-Continent Petroleum Co.'s well, and a diagonal offset to the Comar's Pribboth lease. The good production of this well will cause some drilling, but as the trend of the production is in the direction of leases owned by the Comar, it will be conservatively drilled.

East of the town of Okemah, in Okfuskee County, the Tidal Oil Co. and Terrienne, have what is thought to be the lower Deaner sand in a wildcat well drilled in Section 14-11-10. This well found sand at 3,200 feet and the pay at 3,210-11 feet, and the first 24 hours it produced 180 bbls. The hole is caving very badly and the owners are trying to run a string of casing to shut off the cave. When this is accomplished, the well will be drilled in. It is 6 miles from production, and may result in such a pool as the Lyons-Quinn or the Deaner, which are to the east of it. The Deaner sand is a member of the Dutcher group which produce through this region.

### Good Carter County Well

In Carter County, the Magnolia Petroleum Co.'s No. 2 Hardin, SW cor. SE SE, Section 18-1s-3w, made 600 bbls. from sand at 2,812-42 feet. This is an unusually good well for this region, and will revive interest in this locality.

In Creek County, the Shaffer Oil & Refining Co.'s No. 1 Morrison, SW cor. SW, Section 16-17-8, made 47,000,000 feet of gas from sand at 2,815-75 feet. This gas will be mudded off, and the well drilled to the Wilcox sand.

The following list gives the daily average production for the pools indicated for the week ending September 25.

| Pool— | Wells | Prod. |
|---|---|---|
| Tonkawa (deep) | 125 | 29,499 |
| Otoe | 28 | 3,211 |
| Thomas | 19 | 2,336 |
| Hubbard | 41 | 2,764 |
| North Braman | 49 | 10,682 |
| South Braman | 31 | 7,675 |

### Results in Osage

Carter Oil Co.'s No. 13, NE cor. NW SW, Section 9-26-6, Osage County, sand at 3,221-59 feet, 35 bbls. naturally. Gypsy Oil Co.'s No. 1, NE cor. SE, Section 36-25-5, dry and plugged at 3,420 feet; Prairie Oil & Gas Co.'s No. 12, SE cor. NE SE, Section 21-25-6, sand at 2,708-33 feet, shot with 50 quarts, 500 bbls.; same company's No. 2, SW cor. NW SW, Section 7-23-9, dry in the Burgess sand at 2,135-70 feet; Skelly Oil Co.'s No. 1, SE cor. SW, Section 35-22-8, 150 bbls. from sand at 2,459-79 feet; Elliott & Smith's No. 26, SE cor. NW NW, Section 30-21-12, sand at 2,040-55 feet, made 25 bbls.; Devonian Oil Co.'s No. 1, NE cor. SW, Section 35-20-11, dry and plugged at 2,550 feet.

### New Work Started

Phillips Petroleum Co.'s No. 5, NW cor. SW SW, Section 1-27-5e, drilling at 190 feet; No. 7, NW cor. SE SW, drilling at 320 feet and No. 9, SW cor. NW SW, drilling at 630 feet; Mid-Kansas Oil & Gas Co.'s No. 11, NE cor. SW NW, Section 26-27-5, drilling at 825 feet; same company's No. 6, NE cor. SE, Section 33-27-6, is a location; Blackwell Oil & Gas Co.'s No. 1, NW cor. NE SW, Section 5-27-11, drilling at 610 feet; C. O. Ross' No. 3, NW cor. NE SW, Section 10-27-11, drilling at 730 feet; Lewis Oil Co.'s No. 11, SW cor. NE SE, Section 21-26-6, drilling at 350 feet, and No. 12, NE cor. SW SE, drilling at 510 feet; Barnsdall Oil Co.'s No. 1, NE cor. SW, Section 5-24-5, a rig; Marland Oil Co.'s No. 1, SW cor. SE, Section 15-24-6, drilling at 100 feet; Oliphant and others' No. 1, SW cor. NE SW, Section 32-24-9, drilling at 790 feet.

### Kay County Developments

Carter Oil Co.'s No. 1 Ira Shimp, NE cor. NW, Section 20-29-1, Kay County, completed for 232 bbls. from sand at 2,290-2,330 feet; Blackwell Oil & Gas Co's No. 1-A Kaney, NW cor. Section 7-26-1w, had sand at 860-62 feet, shut in for 2,000,000 feet of gas.

Mid Continent Petroleum Corp.'s No. 4 White, NE cor. SE SW, Section 16-29-1w, is drilling at 710 feet; Comar Oil Co. rigging up No. 9 Harvel, NE cor. Section 21-29-1w, and No. 10, NW cor. NE NE, is a location; Vernon Oil & Gas Co.'s No. 5 Brokehausen, NW cor. SW SE, Section 17-29-1, is a rig; Bu-Vi-Bar and Barnsdall Oil Corp.'s No. 1 Unknown, Section 20 29-5, spudding; Comar Oil Co. is building rig for No. 2 Bechtel, SE cor. SW, Section 5-28-1w; Miller Brothers' No. 1 Robinson, NW cor. SE, Section 1-27-3, a rig; Marland Oil Co. has rig on the ground for No. 1-B Richmond, SE cor. NW, Section 1-26-2w; same company's No. 2 McCullough, NE cor. SW, Section 12-26-2w, is drilling at 720 feet; Barnsdall Oil Corp. is rigging up No. 4 Liegeret, SW cor. NW, Section 28-25-1w; Gypsy Oil Co.'s No. 5 Gardner, NW cor. SW, Section 28-25-1, is a location.

### In Garfield County

Sinclair Oil & Gas Co.'s No. 6 Austin, SW cor. NE SW, Section 36-22-4w, Garfield County, sand at 2,232-47 feet, made 33 bbls. naturally; same company's No. 6 Crews, NE cor. SW, Section 30-22-3w, dry and abandoned at 2,883 feet.

Sinclair Oil & Gas Co.'s No. 62 Walker, SW cor. NW NE, Section 13 22-4w, was drilling at 1,139 feet and No. 63 is drilling at 970 feet.

### Pawnee County

Minnehoma Oil Co.'s No. 8, NW cor. NW, Section 24-21-7, Pawnee County, had sand at 2,732-33 feet, made 250 bbls.

J. B. Grieves is spudding No. 5 Hoverkamp, CEL SW SW, Section 31-21-8; Privett Drilling Co. has a fishing job at 600 feet in its No. 1 Wilson, SE cor. NE SE, Section 10-20-6; Jerry Shults' No. 3 Martin, NW cor. SW NE, Section 7-20-8, drilling at 375 feet.

### Creek County

Roxana Petroleum Corp.'s No. 1 Smith, NW cor. SE, Section 18-19-9, Creek County, is dry in the Turkey Mountain sand at 3,228-3,324 feet; C. G. Tibbens, a dry hole at 2,089 feet in No. 10 Yellowhead, SW cor. NE, Section 9-18 12; Barnsdall Oil Corp.'s No. 4 Mitchell, NE cor. SE SW, Section 22-17-8; sand at 2,306-12 feet, shot with 30 quarts, 20 bbls.; Transcontinental Oil Co.'s No. 2 Mitchell, CEL NE SW, Section 22-17-8, sand at 2,297-2,331 feet, shot with 80 quarts, 60 bbls.; Westland Oil Corp.'s No. 2 Walker, NW cor. SW, Section 22-17 9, sand at 2,410-72 feet, shot with 100 quarts, hade 75 bbls.; McCullough Oil Co.'s No. 1 Johns, NW cor. SE, Section 4-17-10, sand at 2,635-65 feet, made 80 bbls. naturally; Pioneer Petroleum Co.'s No. 10 Bucktrot, SE cor. SW NE, Section 24-17-10, sand at 2,419-45 feet, made 15 bbls. naturally; C. G. Tibbens' No. 26 Con-Mei-Sen-Nei, NE cor. SW, Section 30-15-9, had sand at 3,543-3,603 feet, shot with 5 and 100 quarts, flowed 780 bbls. first 24 hours from first shot and 500 bbls. from second shot.

Gled Oil Co.'s No. 5 Ross, SE cor. NE SW, Section 13-19-8, is drilling at 650 feet; C. L. McMahon, rigging up No. 1 Lewis, SE cor. SW, Section 7-19-9; Bartlett Development Co.'s No. 1 Boyd, SE cor. SW, Section 28-19-9, spudding; Shaffer Oil & Refining Co.'s No. 11 Powell, CWL SE SW, Section 32-18-7e, spudding; Riverland Oil Co.'s No. 5 Land, NE cor. SW NW, Section 1 18-11, is drilling at 700 feet; Sheridan Oil & Gas Co.'s No. 2 Sherrill, NW cor. Section 2-18-11, is spudding; Gray Oil Co.'s No. 4 Leader, SE cor. NE NE, Section 3-18-11, spudding; Holmes and others, rigging up No. 1 Eufaula, NW cor. Section 5-18-11; W. J. Cole's No. 1 Miller, CSL NE SE, Section 32-18-11, is a rig; Devonian Oil Co.'s No. 1 Scruggs, NE cor. SW NW, Section 21 17-8, drilling at 470 feet; The Texas Company's No. 5 Simmons, SW cor. NW SE, Section 3-17-9, drilling at 270 feet; Roxana Petroleum Corp.'s No. 3 Bruce, SE cor. NW NE, Section 10-17-9, a rig. In the same section, Wilcox Oil & Gas Co.'s No. 2 Lindsey, SW cor. NE NE, is a rig; Arnold and others' No. 1 Self, SW cor. SE NW, Section 2-17-10, drilling at 450 feet; Papoose Oil Co.'s No. 1 Joe Wa-Ta She, NW cor. SE, Section 4-17-10, a location Nowata Oil & Refining Co. and Turman's No. 1 Perberton, NE cor. NW NW, Section 8-17-10, spudding; O. P. Stover's No. 1 Thomas, SE cor. NE NE, Section 16-17 10, drilling at 610 feet; Skelly Oil Co.'s No. 1 Yellowhead, C SW SW, Section 32-17-10, drilling at 315 feet; Hiram Oil Co.'s No. 1 Bucktrot, SW cor. NE, Section 35-

## STATE OF TAMAULIPAS, MEXICO, BECOMES ACTIVE PRODUCING FACTOR

By George Blardone

TAMPICO, Mex., Sept. 22.—Of the 12 wells completed the past week one stands out above all the others. It is the Rich Mex Oil Co.'s No. 10, Lot 26, of the Altamira sector of the northern fields. This well, completed as it is on the north bank of the Tamesi River, belongs to the state of Tamaulipas, and so, combined with the well recently discussed (No. 30 of the International Fuel Co.), brings this canton of Altamira even more prominently into the public eye. The well was finished at 2,168 feet, say 90 feet (it is claimed) in the Tamasopa limestone; and it is reckoned good for 5,000 bbls. The Rich Mex Co. (a local company) is preparing, with Government acquiescence, it is claimed, to flow the well into barges and so test it; and, incidentally, bring the production to tidewater at Tampico—no great distance.

So commences the state of Tamaulipas as an active factor in Mexico's petroleum history.

It will be recalled that Mexican Gulf Oil Co., drilling in the interest of the American International Fuel Oil Co., in the Los Esteros, just north—to speak generally—of this Rich Mex well, brought in its No. 30 on July 17 of the current year good for a conservative estimate of 3,500 bbls. (San Felipe formation) at 1,492 feet.

Mexican Gulf is preparing now to test a 10-inch line, which it has laid from this well No. 30 in the Los Esteros to Lot 34 of the Altamira, on the Tamesi River; and this test, proving up to the Government's standard—which, no doubt, it will—will allow an ample test of this interesting No. 30; and so put the state of Tamaulipas on the production map. The line is say 5½ kilometers.

### The Failures

With the exception of a mere showing of oil—say 10 or 15 bbls.—in the Caracol, just west of Tampico, the field operations during the past week are devoid of interest. This Caracol well was drilled by Mexican Petroleum Co., and it finished at a depth of 2,758 feet. The Caracol No. H-9 is a dry hole at 2,631 feet.

The other failures in the northern fields follow: La Corona Petroleum Co.'s No. 157, Lot 1 Cacalilao, is a duster at 2,226 feet; its No. 26, Lot 6 Corcovado, drilled into salt water at 2,155 feet. International Petroleum Co.'s No. 278, Lot 5 Cacalilao, is a dry hole at 2,254 feet. In the old Panuco Pool, Transcontinental Petroleum Co.'s No. 34 Barbarena is a dry hole at at 1,980 feet. In the Ebano sector, Mexican Petroleum Co.'s No. 109 Conteca is a dry hole at 2,375 feet, as is its No. 9 Ebano at 2,885 feet. In the Topila sector, National Lines' No. 36 Santa Fe is a duster at 2,510 feet. In San Mateo, a wildcat, south of Panuco, No. 2 Lot 14 of the Cia Pet. Financiera is a dry hole at 3,034 feet, no lime having been encountered.

In the south fields, Mexican Eagle Oil Co.'s No. 37 Furbero is a dry hole at 3,003 feet.

### Field Operations

In the Panuco-Cacalilao districts of the northern fields, drilling operations are as follows: La Corona Petroleum Co.'s

(Continued on Page 106)

17-10, drilling at 300 feet; Olean Petroleum Co's No. 7 Roberts, SW cor. NW NE, Section 5-16 8, drilling at 450 feet.

**Tulsa County**

W. E. Holmes' No. 4 Timothy, SE cor. SW NE, Section 22-19-10, Tulsa County, was dry and abandoned at 2,085 feet; Bu-Vi-Bar Petroleum Co. also has a dry hole at 3,235 feet in its No. 1 Cooper, NW cor. NW NE SE, Section 33-19 10; Riverland Oil Co.'s No. 8 Anderson, NW cor. SE NW, Section 34-19-11, dry and abandoned at 2,327 feet.

Munn Brothers are rigging up No. 1-A Franklin, SW cor. Section 36-19-11.

**Payne County**

New England Oil & Refining Co.'s No. 3 Broyles, CWL NE NW, Section 26-18-4, sand at 1,964 78 feet, shot with 30 quarts, 85 bbls.; Producers & Refiners Corp. has abandoned No. 2 Goss, SE cor. SW, Section 7-18-5, on account of bad fishing job at 3,041 feet.

**Okmulgee County**

La Beene and others' No. 3 Hill, CEL NE SW, Section 23-15-11, Okmulgee County, sand at 2,811-21 feet, shot with 10 quarts, made 110 bbls. D. D. Michelson has a dry hole at 2,747 feet in No. 2 Unallotted, C NW NW NW, Section 29-15-12; Kirkland & Sons' No. 3 Gibson, SE cor. NW NE, Section 17-15-13, dry and abandoned at 2,586 feet; C. L. McMahon's No. 1 McKinney, SE cor. NE SW, Section 16-15-14, dry at 2,473 feet; The Texas Company's No. 9 Bruner, CSL SE SE, Section 16 15-14, sand at 2,281-97 feet, shot with 15 quarts, 100 bbls.; McCullough Oil Co.'s No. 7 Garrett, NE cor. Section 21-15-14, sand at 2,265-66 feet, shot with 15 quarts, 200 bbls.; Abbott & Dillard's No. 1 Duff, NW cor. NE, Section 11-14-12, dry and abandoned at 2,738 feet; The Texas Company's No. 2 Jones, SW cor. NW, Section 28-13-11, sand at 3,168-75 feet, shut in for 2,000,000 feet of gas; Diamond Oil Co.'s No. 1 Jones, NE cor. NW NW, Section 27-13-13, dry and abandoned at 1,175 feet.

La Beene and others' No. 1 Hill, NW cor. SE SW, Section 23-15-11, is spudding; Culp and others' No. 5 Vanderslice, SE cor. NW SE, Section 30-15-11, drilling at 1,000 feet; Jack Summers, moving in machine for No. 1 Edward Durant, CNL NE SE, Section 30-15-15; Sidwell Drilling Co.'s No. 2 Lunsford, NW cor. SW SW, Section 4-14-11, a rig; J. H. Rebold's No. 6 McIntosh, SE cor. NE SE, Section 5-14-11, spudding; Hazlett & Campbell, moving in machine for No. 1 Dunbar, SW cor. Section 30 14-13; E. A. Hutchinson, moving in machine for No. 5 Henry Starr, NW cor. SE, Section 2-14-14; Cusack & Cherron's No. 6-A Doyle, SW cor. NW NE, Section 29-13-14, drilling at 350 feet; Moffett and Pure Oil Co.'s No. 8 Hawkins, CEL NE NW, Section 7-11 12, spudding.

**Muskogee County**

C. M. Bradley is moving in machine for No. 3 Crittenden, NE cor. NW SW, Section 5-14-19, Muskogee County; his No 1 Cumpton, NW cor. NE SW, Section 16-14-19, is drilling at 360 feet.

**Okfuskee County**

Hartman & Mann's No. 1 Barnett, SE cor. Section 22-12-11, Okfuskee County, dry at 2,930 feet; Atlantic Oil Producing Co.'s No. 1 Wind, SW cor. SW NE, Section 35-11-9e, sand at 2,839-50 feet, 80 bbls. naturally; Mid-Kansas Oil Co.'s No. 1 Berryhill, C NE NE NW, Section 35-11-9, sand at 3,104-33 feet, shut in, 7,000,000 feet of gas; Eagle-Picher Lead & Zinc Co.'s No. 1 Hawkins, SW cor. SE NE, Section 4-11-12, sand at 1,520-52 feet, shut in, 1,000,000 feet of gas.

**Seminole County**

Gypsy Oil Co.'s No. 8 Replogle, C SE SW NE, Section 8-10-8, Seminole County, sand at 3,451-82 feet, shot with 20 quarts, made 5 bbls.; Barnsdall Oil Corp's No. 1 Ingram, C NE NE SW, Section 10-9 5, sand at 4,309-14 feet, 17 bbls.; Gypsy Oil Co.'s No. 2 Jefferson, C SE SW NE, Section 18-9-8, sand at 3,248-69 feet, completed for 120 bbls.

Amerada Petroleum Corp.'s No. 4 Baker, SW cor. SE SE, Section 33-10-6, was drilling at 1,700 feet and has rig on ground for No. 6, NE cor. SW SE; Seawright's No. 1 Epperson, C SE SE NE, Section 33-10-6, rigging up; Mid Continent Petroleum Corp.'s No. 3 Grayson, NE cor. SW SW, Section 34-10-6, drilling at 700 feet; Gypsy Oil Co. and Prairie Oil & Gas Co.'s No. 1 Micco, SW cor. NW, Section 12-10-7, location; Independent Oil & Gas Co's No. 2 Brunner, SE cor. SW SE, Section 10 9-5, rig; Magnolia Petroleum Co.'s No. 2 Simpson, CSL NW SE, Section 10-9-5, rig; Gypsy Oil Co.'s No. 1 Noble, C SW SE SW, Section 10-9-6, rig; Prairie Oil & Gas Co.'s No. 1 Thompson, SE cor. NW, Section 10-9-6, rig; Sinclair Oil & Gas Co.'s No. 1 Dixon, SE cor. SW, Section 13-9-6, rig; also No. 2, SW cor. SE SW; Mid-Continent Petroleum Corp.'s No. 2 Rentie lease, same section, the same com-6, a location; Kingwood Oil Co., spudding No 1 Johnson, SE cor. Section 22-9n-6; Amerada Petroleum Corp. is rigging up No. 3 Fixico, NE cor. SE NE, Section 23 9-6, and has rig on ground for No. 4, NW cor. SE NE; same company's No. 2 Killingsworth "A," NE cor. SW NE, Section 23-9-6, a location. On its Rentie lease, same section, the same company has rig on ground for No. 1, SE cor. NW NE. Carter Oil Co. is building rig for No. 2, Grisso, SW cor. SE SW, Section 23-9-6, also for No. 3, NE cor. SW; Indian Territory Illuminating Oil Co.'s No 3 Goodin, SW cor. NE NE, Section 23-9-6, location; on its Harjo lease, same section, No. 2, SW cor. SE SE, is a rig; also No. 3, NW cor. SE NE. Tidal Osage Oil Co.'s No. 1 Harjo, NE cor. NW SE, Section 23-9-6, is drilling at 200 feet and has rig on ground for No. 6, SE cor. SW SE. Barnsdall Oil Corp. is building rig for No. 1 Carter, C SE SE NW, Section 24 9-6, and has rigs up for No. 7, NW cor. SW NW, and No. 8, NE cor. SW NW. Gypsy Oil Co.'s No. 3 Carter, NE cor. Section 24-9-6; No. 4, NE cor. NW, and No. 5, NW cor. NE NW, are rigs; Tidal Osage Oil Co.'s No. 2 Carter, NE cor. NW SW, Section 24-9n-6, is drilling at 50 feet. No. 4, C SW NW SW, is a rig; Gypsy Oil Co.'s No. 4 Fixico, SW cor. NE NE, is drilling at 100 feet and No. 5, NE cor., at 155 feet. Its No. 3 Wolfe, NW cor. in same section, is a rig. Independent Oil & Gas Co. and Inter-Ocean Oil Co.'s No. 3 Jones, SW cor. SE. Section 26 9-6, drilling at 39 feet; Indian Territory Illuminating Oil Co. has rig on ground for No. 6 Bowlegs, NE cor. SE, Section 26-9-6; Carter Oil Co.'s No. 1 Lujes, NE cor. Section 27-9-6, drilling at 100 feet; Turman Oil Co., rig on ground for No. 1 Zollinger, C SW SW NW, Section 35 9-6; Southwestern Petroleum Co.'s No. 5 Peters, SW cor. NE SE, Section 18 9-8, spudding.

**Hughes County**

Gypsy Oil Co.'s No. 3 Long, C NW SE SE, Section 27-9-9, Hughes County, got sand at 3,315-29 feet, and was completed for 360 bbls.; Producers & Refiners Corp.'s No. 3 Walker, C NE SW SE, Section 32-8-8, sand at 4,165-69 feet, swabbing 15 bbls.; Dixie Oil Co.'s No. 1 Diamond "C," C SE SE NE, Section 18-8-10, plugged and abandoned; same company abondoned No. 2 Garner, C NW NW NE, Section 5-7-8, on account of bad fishing job at a depth of 4,055 feet; Homa-Okla Oil Co.'s No. 7 Carolina, C SW SE NE, Section 6-7-8, Hunton lime at 3,962-92 feet, 30 bbls.; Ramsey Oil Co.'s No. 1-A Jacobs, C NE NW NE, Section 14-7-8e, sand at 2,915-24 feet, shut in, 12,000,000 feet of gas.

Independent Oil & Gas Co. is spudding No. 4 Davis, SW cor. SE, Section 26-9-9; H. G. Newman's No. 1 Sam Long, SE cor. NW, Section 13-8-9, drilling at 745 feet; Dixie Oil Co.'s No. 1 Bruner, C SW SW SW, Section 17-8n-10e, drilling at 410 feet.

**Grady County**

Carter Oil Co.'s No. 1 Ridley, NW cor. NE SW, Section 8-3-5, Grady County, is a location; same company is building rig for No. 1 Russell, NE cor. SW, Section 21-3-5w; Magnolia Petroleum Co.'s No. 1 Polson, SE cor. SW SW, Section 27-3-5w, rig; Carter Oil Co.'s No. 1 Wham, SW cor. NE, Section 34-3-5w, location.

**Garvin County**

Magnolia Petroleum Co.'s No. 1 McLain, SW cor. NW NE, Section 23-2-3, sand at 3,025-39 feet, made 12 bbls. naturally; same company's No. 2 Wilson, SE cor. Section 16-2-2w, sand at 1,352-58 feet, made 30 bbls.; same company's No. 3 Wilson, NE cor. Section 21-2-2, sand at 1,335-50 feet, made 35 bbls.; Its No. 3 Bumpass, NW cor. NE SE, Section 33 1-3w, sand at 2,576 84 feet, 174 bbls.

Humble Oil & Refining Co.'s No. 1 Lyles, SW cor. NW SW, Section 2-2-3, is a location; Wirt Franklin's No. 9 Pruitt, NW cor. SE NW, Section 3-2-3, drilling at 154 feet; Magnolia Petroleum Co., moving in timbers for No. 2 Adams, SW cor. NE SE, Section 3-2-10 at 465 feet, with derricks standing for Nos. 14 and 15 McLean. The Rio Bravo Oil Co.'s No. 7 T. & N. O. is fishing at 2,635 feet. Locations have

(Continued on Page 109)

# GREENWOOD COUNTY COMPLETIONS WEEK'S FEATURE IN KANSAS FIELDS

By J. L. Dwyer

Greenwood and Sumner Counties are at present the most interesting scenes of development work in Kansas. Most of the completed work in the past week was in Greenwood County.

The Empire Gas & Fuel Co.'s No. 15 Kipfer, C NE NW SE, Section 11-22-11, was shot with 220 quarts in sand at 1,761-1,841 feet and started at 200 bbls. of 41 gravity oil. The same company's No. 7 Duby, C SW SW SW, Section 14-22-11, started at 30 bbls., after a 40-quart shot at 1,879-1,909 feet. The York State Oil Co.'s No. 14 O'Neil, C NE NE SE, Section 32-22-11, got sand at 1,910-50 feet, which was shot with 140 quarts. It made only a 10-bbl. well. Simmons and others' No. 4-B Fankhouser, C SE SW NE, Section 4-22-11, was good for 150 bbls. following a shot of 120 quarts at 1,805-32 feet.

Roth, Faurot & Phillips' No. 2 Burgess, C SE NW NW, Section 15-23-10, was abandoned at 2,327 feet. There was a sand at 2,166-69 feet, but it was barren. The Empire Gas & Fuel Co.'s No. 5 Thrall, C SW SW SW, Section 29-23-10, started at 400 bbls., after a 100-quart shot at 2,345-08 feet.

Over on the east side of the county Shaffer & Howell's No. 14 Schneider, C NE SW NW, Section 15-23-13, got sand at 1,570-1,620 feet, which was shot with 60 quarts, making a 50-bbl. well. No. 10 Shadel of the Tidal Oil Co., SW cor. NW SE, Section 15-23-13, was shot in sand at 1,628-87 feet, but it made no oil and was drilling at 1,700 feet. The Mid-Continent Petroleum Corp.'s No. 12 "B" Dehlinger, SE cor. SW NW NE, Section 29-23-13, is a 20-bbl. well from sand at 1,656-76 feet, shot with 60 quarts.

The Mission Oil Co.'s No. 1 B. Moore, C SW SE SE, Section 23-24-9, got sand at 2,120-38 feet, which was shot with 40 quarts. It made a 30-bbl. well. Polhamus and others' No. 2 Halverson, NE cor. NW NE, Section 26-24-9, started at 30 bbls. from sand at 2,106-33 feet, shot with 40 quarts. The Phillips Petroleum Co.'s No. 2 Nixon, C NE NE SE, Section 25-24-9, found sand at 1,831-58 feet, which was given a 90-quart shot. It started at 150 bbls. a day. The same company's No. 3 Nixon, C NE SE SE, Section 25, made 200 bbls. initial production from sand at 1,810-47 feet, shot with 95 quarts, while No. 4 Nixon, C SE SE SE, Section 25, was a 75-bbl. well after a 75-quart shot at 1,828-57 feet. The Manhattan Oil Corp.'s No. 1 Edwards, C SE SE NE, Section 35-24-10, was abandoned as dry at 2,107 feet. It had a broken sand at 1,855-67 feet. McGinnis and others' No. 1 Mock, C NE NE NE, Section 36-24-9, was the best well of the week in the county. It was good for 300 bbls. initial production following a shot of 100 quarts at 1,822-55 feet.

The Independent Oil & Gas Co.'s No. 1 Jackson, C SW NE NE, Section 23-25-8, was abandoned at 2,605 feet, owing to a bad hole. There was a showing in sand at 2,402-08 feet and sandy shale at 2,431-41 feet.

**New Work in Greenwood**

New work reported includes the following: Theta Oil Co.'s No. 17 Brown-

(Continued on Page 109)

# SURVEY COMPLETED FOR PIPELINE FROM ARTESIA TO MALJAMAR POOL

By Special Correspondent

ARTESIA, N. Mex., Sept. 25.—The Illinois Pipe Line Co. has completed surveying a right of way for its line to extend from the Artesia to the Maljamar Pool. Construction work is expected to start within 30 days, as by that time the Ohio company should have in its No. 1 well on the William Mitchell permit in Section 18 17-32, west of the Maljamar wildcat, which from the log gives every indication of making a producer. The top of the salt in this test was encountered at 905 feet, with the hole now down 1,450 feet.

With the water cemented off in No. 1 Baish of the Maljamar company, this well is pumping 140 bbls. daily. The majority of this production is being sold for fuel in the Lea County Field.

After producing at the rate of 40 bbls. daily for the past week, the Skelly Oil Co. has shut in No. 1 on the Lynch permit in the NE cor. Section 22-17-31. This action, it is believed, is due to a slight conflict with the Government relative to permit ownership. Under the act relative to the mining of coal, phosphate, oil, oil shale gas and sodium on public d main, a company may own only one permit within any known geological structure of a producing oil or gas field. A satisfactory adjustment, however, is expected to be made immediately, as both the Government and State have shown a decided inclination to assist the operator.

South of the Skelly well, the Bruce Sullivan No. 1 on the Lodewick permit in Section 1-18-31 has been shut down at 2,540 feet, it being necessary to run a string of casing.

**Moved Location**

After making a location in the NE NE Section 34-18-32, the Prairie Oil & Gas Co. has moved the location and will drill north of the Skelly well on a government permit in Section 10-17 31.

Woolev-Jones of Los Angeles have made a location and are moving rig timbers to the C SW Section 21-17-30 on the Danciger permit. No. 1 well of this company on the Beeson permit is drilling at 3,200 feet.

North of the discovery well, the Cap Rock Oil & Gas Corp. is drilling with a rotary on No. 1 test in the SW Section 11-16 32. This equipment will be used in going through the red beds and upper sands, which have a tendency to cave.

A fishing job is delaying the Inglefield & Bridge's No. 1 in Section 4-17-34 at 1,380 feet. The tools are reported 70 feet off bottom. The Maljamar company also have a fishing job on No. 1 Grace Mitchell well in the SW Section 5-17-32 at a depth of 600 feet.

In the Artesia Field, the Pueblo Oil Co. picked up a good sand in No. 1 in Section 33-17-28 from 1,988-97 feet. This well will be carried down to the New States pay.

Flynn, Welch & Yates are preparing to deepen their No. 10 producer in the NE SE Section 29-17-28 to the Toomie-Allen sand, looked for around 2,650 feet.

The Decum Development Co. is plug-

(Continued on Page 105)

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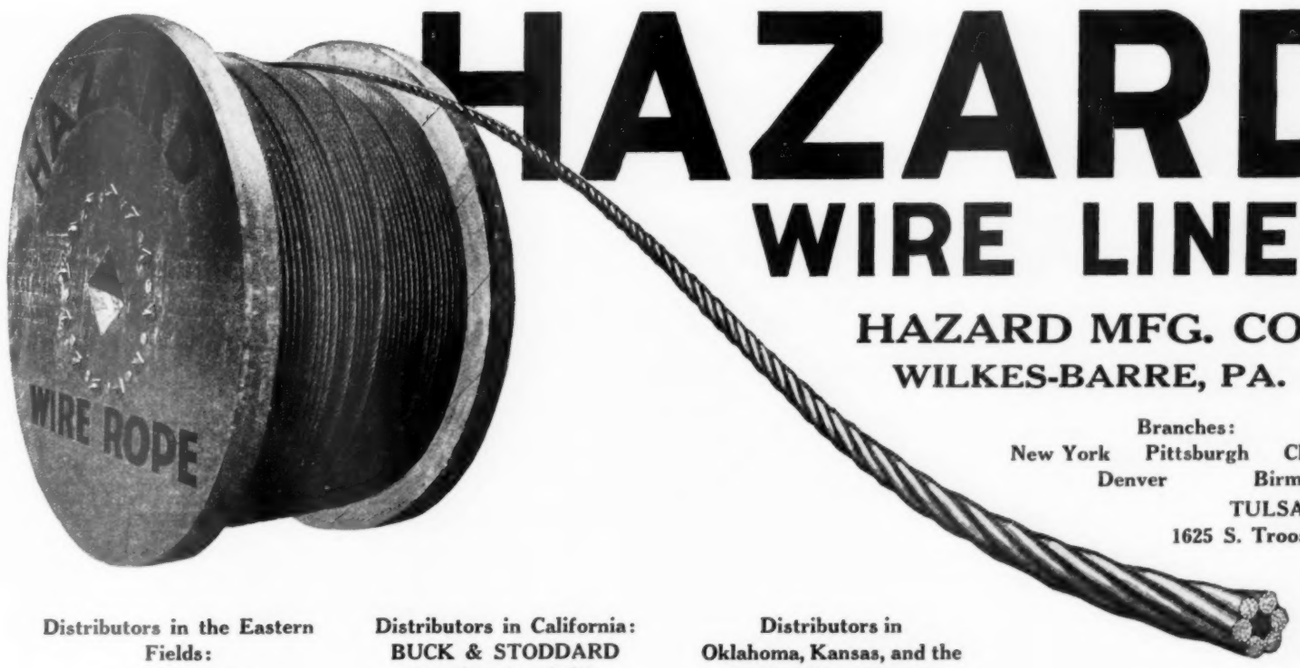


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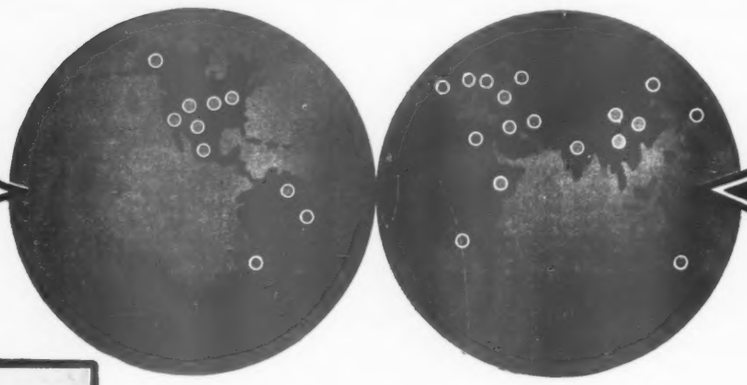

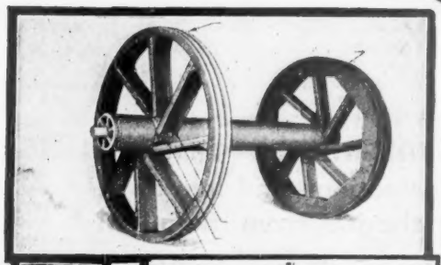

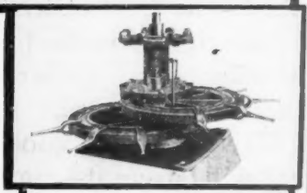

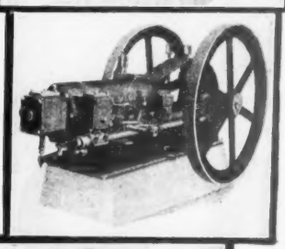

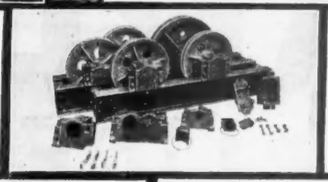

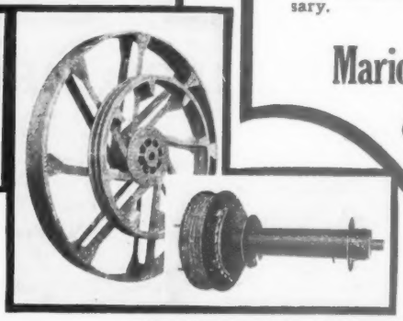

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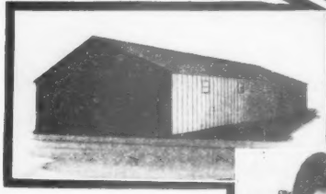

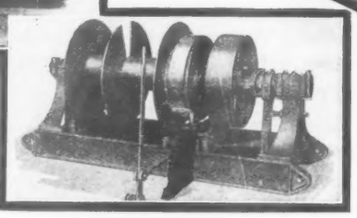

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# Urania Has Big Well; Lisbon Extended

## Renewed Hopes of New Field Southeast of Phillips Petroleum Co.'s Walber Well in the Lawson Area of Arkansas

By James H. Dameron
*Staff Correspondent, Louisiana-Arkansas*

SHREVEPORT, La., Sept. 27.—A 1,000-bbl. well in the north end of the Urania (La.) Field and an extension of the Lisbon (Ark.) Field were the feature developments in the producing areas last week, while the fraternity's interest in wildcat territory is held mainly by the Lawson area in Union County, Arkansas.

The big well was Hunt, McCurry & Zoder's No. 3 Winnberry, CSL SW SE, Section 7-10-2e, which was credited with being a 1,000-bbl. well in 5 feet of sand topped at 1,513 feet. The well is a west offset to the No. 1 those operators drilled several months ago and extended the field to that northern area. Several wells have been drilled in that section since that date, but No. 3 Winnberry is by far the largest producer in that immediate territory. It is making 5 per cent sand.

Simms Oil Co.'s No. 1 Matthews, SW cor., Section 34-16-16, extended the Lisbon Field to the north, and it is the first well in Section 34. The well was good for 25 bbls. on the pump. In the south end of the field, Unity Petroleum Co. has four tests. If they are completed as producers, they will extend the field a short distance to the south. Two of the tests should be completed in another week, barring accidents.

Smackover and Nevada both came through with good completions when compared to the average wells being drilled in that old territory. Caddo closed a quiet week, while the Magnolia animated the old Cotton Valley area with a 135-bbl. well. Magnolia company is active in that territory. Urania showed a small increase in field activity, which is fairly divided between the northern and southern ends of the field.

Twenty-two new producers were completed in the division last week, with a combined initial output of 2,213 bbls. While Arkansas had 15 new wells, they were good for only 816 bbls., against the 1,397 bbls. of new production from Louisiana's seven new wells. Thirteen tests were failures and 10 of them drilled in Louisiana. Three of the thirteen were deep tests, one in Arkansas and two in Louisiana. Little change was made in field operations in the division; 27 wells are waiting for standard rigs, 227 tests are drilling, 29 are rigged up, 53 derricks are up and locations total 19.

### Walber Well on Swab

The "Walber well," in the Lawson area, Phillips Petroleum Co. and associates' No. 2 Cordell, SE NE, Section 6-18-13, was put on the swab and made better than 3,000 bbls. of fluid the first 24 hours from sand at 2,967-84 feet. Of the fluid, 335 bbls. was oil and the remainder water. The oil tested 31.5 gravity and separates easily. The second 24 hours the well swabbed 294 bbls. of oil, and the swab was lost the third 24. Saturday morning the swab had been fished out, and it was claimed the liner would be pulled and the open hole swabbed to get all of the sand possible out. The hole will then be cleaned out and the liner reset. Foundation has been laid on the lease for an air jammer.

Apparently No. 2 Cordell is opening another field for Arkansas. Because of the presence of dry holes around the well, the trend of the field will be to the southeast if one exists there, in the opinion of most operators. The wildcat territory is now being tested to the southeast. A couple of miles to the southeast, Simms Oil Co. and Sun Co.'s No. 1 Simmons, NW NE SE, Section 9-18-13, topped sand at 2,929 feet and cored 8 inches of it and found it bearing oil. The hole is being reamed down to 2,928 feet, and 6-inch will be cemented there. It was No. 1 Simmons that blew out at 2,650 feet and caused the excitement in Lawson. Then the Walber well started its capers.

Offsetting the Simmons to the southwest, Natural Gas & Fuel Corp.'s No. 1 Cordell cored salt water sand at 2,668 feet. The hole is being plugged back to test 10 feet of sand topped at 2,648 feet. A casing seat was left on top the sand so the sand at that depth could be tested. Offsetting No. 1 Simmons to the northeast about half a mile, Marine Oil Co. has a derrick up for No. 1 Thompson. Southeast and in the NW cor, SW NE, Section 22-18-13, Tharpe and associates' No. 1 Peck is rigged and ready to go. Over near Strong Peer Oil Corp.'s No. 1 Hollis, NW NE SW, Section 36-18-12, is drilling. Peer bought a checkerboarded block there during the first days of the Lawson excitement.

Rumors have been rife that pipeline companies have made hurried surveys for lines in the event a field is opened there. However, little credence was given the rumors by the majority of operators. The Standard's trunk line to the Mississippi runs close by the Lawson area. Atlantic Oil Producing Co. is taking the oil from the Walber well, which is going into steel storage on the lease. Atlantic plans to build a temporary loading rack at Lawson and run a 2-inch line to the well if it is completed as a commercial producer of size sufficient to warrant the expense of that method of transporting the oil. The line, if built, would be about three-quarters of a mile in length.

### Interesting Wildcat

Another interesting wildcat in Arkansas is the Kensaw Petroleum Co.'s No. 3 on the Cotton Belt Land & Development Co., C Section 3-20-24. The hole was junked some time ago at 2,806 feet, where the operators claimed a gas showing. A few weeks ago the operators went back to the test and cleaned out 2,000 feet of junk. A whipstock was set at 2,000 feet and the hole drilled on down to 2,806 feet, where 4½-inch casing was cemented. The whipstock job was a record in Arkansas, so far as can be learned.

Magnolia Petroleum Co.'s No. 1 Arkansas Timber Co., SW cor. SW NE, Section 33-15-11, Bradley County, had a gas showing at 2,707 feet. A string of 8¼-inch pipe was cemented at 2,689 feet, the plug drilled and the hole was being reamed down to 2,707 feet Saturday morning to test. Imperial Oil & Gas Co.'s No. 1 Goodwin, Section 26-17-16, cored sand at 3,079-82 feet, and 4½-inch casing is being cemented at 3,078 feet on cap rock.

In Louisiana, the Georgetown area came in for more attention through H. L. Hunt's No. 1 Matthews, Section 15-9-1e, in Grant Parish, which has oil sand at 1,550-54 feet. Keene & Woolf Oil Co. have rigged up No. 1 Rider, Section 16 9-1e, which offsets the Hunt test to the west. Other operators are watching that territory with interest.

Gilliland Oil Co. and Ramsey's No. D-1 Taylor, Section 14-23-8, a deep test in the Haynesville Field, is being drilled down with the hopes of increasing the 35 bbls. of production from 4,513-48 feet. Saturday morning the test was drilling at 4,582 feet.

Early in the week Tom Taggart, prominent National Democratic political leader, bought a half interest in the royalty on the south half of the southeast quarter of Section 15-20-15, in Caddo Parish, from Victor Wenzell, operator in the old Caddo Field. He paid $15,000 cash for the half interest in the 80-acre tract royalty. At the same time he sold a quarter interest to Wenzell on the 200 acres he has leased in that territory, described as follows: North half of the northwest, Section 14-20-15; the east half of the northeast of Section 15-20-15, and the southwest quarter of the northeast of 15. The consideration for the latter deal was reported to be $1,000.

In Arkansas the biggest deal reported was the purchased of Louann producing properties by the Magnolia Petroleum Co. from the El Dorado Union Oil Co. at a reported price of $57,000 cash. The property involved was the La Grone lease, the southeast 40 of the southwest and the west 10 acres of the northwest, Section 36-15-17, and the W. A. Smith lease, which is the southwest 40 acres of the northeast of Section 36-15-17. The Mganolia company has been making small purchases in Smackover for several months, adding to its production in that area. Magnolia company recently completed an 8-inch welded line from Smackover to Beaumont, Tex.

### Slight Production Gain

Production of the division climbed 670 bbls. in the daily average last week as Louisiana made a healthy gain and Arkansas made a slight gain. Urania in Louisiana went up 1,200 bbls., but as small gains were made only in Bellevue and Haynesville, the net gain of the State was cut to 635 bbls. Slight gains in Smackover heavy and Stephens were slightly in excess of the losses in all other Arkansas fields, and the State showed a 35-bbl. gain for the seven-day period. Production for the division during the seven-day period was 1,467,000 bbls.

Production by fields:

| | |
|---|---|
| **LOUISIANA** | |
| Bellevue | 2,100 |
| Caddo light | 10,210 |
| Caddo heavy | 2,580 |
| Cotton Valley | 7,250 |
| De Soto and Red River | 4,065 |
| Elm Grove | 530 |
| Haynesville | 9,330 |
| Homer | 5,600 |
| Urania | 15,425 |
| Total | 57,090 |
| **ARKANSAS** | |
| Smackover heavy | 119,430 |
| Smackover light | 14,540 |
| El Dorado | 6,865 |
| Lisbon | 8,000 |
| Nevada | 1,950 |
| Stephens | 1,695 |
| Total | 152,480 |
| Total both fields | 209,570 |
| Total last week | 208,900 |
| Gain | 670 |

### ARKANSAS
### Union County

Gulf Refining Co.'s No. 41 Hardy-Murphy, Section 4-16-15, in the Kenova district, was the star completion of the week in Smackover on the Union County side. The well was credited with being a 240-bbls. pumper in sand at 2,348-62 feet. Magnolia Petroleum Co.'s No. 2 M. J. Scott, Section 12-16-17, was finished at 2,250-62 feet good for 10 bbls. on the beam. Simms Oil Co.'s No. 1 Matthews, Section 34-16-16, is making 25 bbls. on the pump from sand at 2,081 to 2,111 feet.

Lisbon averaged a new well a day last week. Magnolia Petroleum Co.'s No. 2 A. E. Slaughter, SE cor. NW SE, Section 17-17-16, was good for only 2 bbls. on the pump in sand at 2,097 to 2,138 feet. The well offsets to the north a dry hole drilled on Lion company's Mitchell lease. Up in the northern end Atlantic company's No. 4 Ford, NW cor. Section 3-17-16, was good for 35 bbls. on the pump in sand at 2,115-40 feet. Magnolia company's No. 4 Halsey, Section 20-17-16, was good for 25 bbls. on the pump in sand at 2,132-64 feet. Ohio Oil Co.'s No. 1 F. M. Stocks, Section 21-17-16, is pumping 20 bbls. from sand at 2,140-

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## LAWSON AREA IN UNION COUNTY MOST PROMISING LOUISIANA CENTER

By James H. Dameron

EL DORADO, Ark., Sept. 27.—The Lawson area in Union County, Arkansas, continues to be the chief center of interest for operators in the Louisiana-Arkansas division. Apparently a new field has been opened in that territory, the dimensions and trend of which will partly be determined by tests now drilling and which should give a fair estimate of that area's possibilities within the next two weeks.

Phillips Petroleum Co. and associates' No. 2 Cordell, Section 6-19-13, which logged the deep sand, believed by many to be the Woodbine, at 2,967-84 feet, was swabbed the latter part of the week. It made better than 3,000 bbls. of fluid, 335 bbls. of which was salt water, during the first 24 hours. The Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, will probably be next to test that formation. It reached the sand at 2,929 feet.

Aside from the excitement around Lawson nothing encouraging happened in Arkansas during the last week. Little wildcat activity, other than at Lawson, is being carried on in Union County.

In Louisiana another sprinkling of dry hole reports from all over the territory told the story of the wildcatters' efforts there for the past week. Two of the failures were deep holes, one below 3,500 feet and the other below 3,300 feet.

Grimes & Jones' No. 1 Prothro, Section 3-18-15, tested salt water at 2,540 feet. The casing was pulled and the test abandoned. Calgo Oil Co.'s No. 1 Primm, Section 9-18-17, is drilling at 90 feet. Imperial Oil & Gas Co.'s No. 1 Goodwin, Section 26-17-16, is being cored at 3,081 feet. Marine Oil Co.'s No. 1 Thompson, Section 10-18-13, is a derrick. Matthews and associates' No. 1 Lewis, Section 14-19-12, is waiting for cement to set at 2,650 feet. A derrick is up for H. O. Miller, trustee's, No. 1 L. Hill, NW cor. NE SE. Natural Gas & Fuel Corp.'s No. 1 Cordell, Section 9-18-13, was drilled to 2,668 feet and cored salt water sand there. The hole was plugged back to test 10 feet of sand at 2,648-58 feet. A casing seat had been left at the top of the first sand. Owens and associates' No. 1 Duke, SW cor. NE, Section 6-17-16, east of Lisbon, is a derrick. Twelve and one-half inch casing was set at 61 feet at Peer Oil Corp.'s No. 1 Hollis, Section 36-18-12, and the test is shut down at 700 feet for fuel. Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, cored oil sand at 2,929-30 feet and 6-inch is being set on top of the sand. Arrangements are being made to deepen A. H. Stoltz' No.

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# Pierce Junction Well 1,000 Barrels

## Blowout in Lockport Field, Calcasieu Parish, Louisiana. Spindletop and Sour Lake Swell New Production

By P. L. McGreal
*Staff Correspondent, Gulf Coast Fields*

HOUSTON, Tex., Sept. 27. — It has been an uneventful week in the Gulf Coast division, aside from the developments in the deep sands around the old cap rock area at Spindletop. A well was completed on the north flank of the Pierce Junction Dome Friday good for 1,000 bbls. initial output at 3,800 feet. This and a blowout in the Lockport Pool in Calcasieu Parish, Louisiana, were the only interesting features

The estimated daily average gross production for the week of September 25 is placed at 188,390 bbls., a decrease of 5,211 bbls. compared with the previous week. The south Louisiana pools are credited with 13,495 bbls. of the gross.

Compared with last week, the Boling Pool increased 80 bbls.; Blue Ridge, 225 bbls.; Lockport, 630 bbls.; Pierce Junction, 900 bbls.; Orange, 700 bbls.; Vinton, 205 bbls. The Spindletop Pool decreased 5,921 bbls.; Big Creek, 325 bbls.; Goose Creek, 525 bbls.; Hull, 300 bbls.; Sour Lake, 750 bbls.; South Liberty, 180 bbls.; West Columbia, 75 bbls.

The estimate for each pool is as follows:

| Pool— | Gross Bbls. |
|---|---|
| Boling | 1,840 |
| Batson | 1,720 |
| Blue Ridge | 1,600 |
| Barber Hill | 1,200 |
| Big Creek | 2,175 |
| Dayton | 180 |
| Damon Mound | 800 |
| Edgerly (La.) | 700 |
| Goose Creek | 10,100 |
| Humble | 4,520 |
| Hull | 22,100 |
| High Island | 125 |
| Jennings (La.) | 1,250 |
| Lockport (La.) | 5,600 |
| Markham | 75 |
| Nash Dome | 900 |
| Orange | 8,700 |
| Orchard | 225 |
| Pierce Junction | 3,250 |
| Piedras Pintas | 125 |
| Spindletop | 92,000 |
| Saratoga | 1,425 |
| Sour Lake | 9,050 |
| South Liberty | 3,870 |
| Vinton (La.) | 5,875 |
| Welsh-Anse La Bute (La.) | 70 |
| West Columbia | 8,800 |
| Miscellaneous | 115 |
| Total | 188,390 |

### Southwest Fields

The estimated gross for the Southwest fields is 45,625 bbls, an increase of 100 bbls. over last week's estimate. Luling increased 470 bbls.; Mirando decreased 250 bbls. and Lockhart declined 135 bbls.

The estimate for each field is as follows:

| Field— | Gross Bbls. |
|---|---|
| Luling | 22,120 |
| *Mirando | 17,000 |
| Somerset | 2,025 |
| Callihan | 85 |
| Rockdale-Minerva | 920 |
| Lockhart | 3,465 |
| Total | 45,625 |
| Grand total this week | 234,015 |
| Grand total last week | 239,226 |
| Net decrease | 5,211 |

*Includes Webb, Jim Hogg and Zapata Counties and the Cole-Bruni, Cin-Tex sections of Duval County.

Thirty wells were completed in the Coastal pools during the week, of which three were failures and three bailed salt water. The new production aggregates 23,036 bbls. Four tests were bailing at the close of the report.

The following table shows the results for the week in each pool:

| Pool— | Comp. | Prod. | Dry | Sw. | Big. |
|---|---|---|---|---|---|
| Boling | 1 | 900 | 0 | 0 | 0 |
| Batson | 1 | 65 | 0 | 0 | 0 |
| Goose Creek | 2 | 40 | 0 | 0 | 0 |
| Hull | 2 | 225 | 0 | 0 | 1 |
| Jennings | 3 | 450 | 1 | 0 | 0 |
| *Lockport | 1 | 2,500 | 0 | 0 | 2 |
| Pierce Jct. | 2 | 1,900 | 0 | 0 | 0 |
| Orange | 4 | 300 | 0 | 2 | 0 |
| Spindletop | 8 | 16,200 | 0 | 0 | 1 |
| Saratoga | 1 | 0 | 0 | 1 | 0 |
| Sour Lake | 2 | 206 | 0 | 0 | 2 |
| Vinton | 1 | 250 | 0 | 0 | 0 |
| Miscellaneous | 2 | 0 | 2 | 0 | 0 |
| Total | 30 | 23,036 | 3 | 3 | 6 |

*Sanded.

### Pierce Junction Pool

The completion reported on the north flank of the Pierce Junction Pool is J. F. Bashara's No. 2 Bender. On the same side, but to the west, the Rio Bravo Oil Co.'s No. 3 P. F. Settegast is flowing 900 bbls. at 3,700 feet.

Bashara's No. 1 Bender is drilling at 3,233 feet. The Rio Bravo Oil Co.'s No. 4 Settegast is drilling around 2,544 feet with a derrick up for No. 5. The Marland Oil Co.'s No. 1 Prudential is at 2,765 feet. The Gulf Production Co.'s No. 1-A Jones fee is around 2,765 feet and No. 1 Jones is at 2,235 feet. On the east flank the same company's No. 19 Taylor is drilling at 3,785 feet. H. R. Cullen's No. 6 Howe is idle. The Texas Exploration Co.'s No. 10 Dooley is drilling below 2,915 feet. The Humble Oil & Refining Co.'s No. 1 Navarro is at 2,986 feet.

### Shallow Well at Boling

James Weed's No. 2 Keller on the Boling Dome is heading 900 bbls. at 453 feet. The oil is 18 gravity. About 1,500 bbls. of the gross output there comes from shallow cap rock wells on the dome. Weed and Gayle are rigging No. 3 Keller. On the northwest flank, The Texas Company's No. 2 Felder is drilling around 4,000 feet in pyrites and hard sand. On the northeast flank, same company's No. 1 Framer is nearing 4,100 feet in shale and the Sun Oil Co.'s No. 1 Framer is around 1,985 feet

In the Goose Creek Pool, the Humble Oil & Refining Co.'s No. 12 Peninsula is pumping 30 bbls. at 3,500 feet. The Gulf Coast Oil Co.'s No. 10 Galliard was worked over into a 10 bbl. pumper at 2,790 feet.

In the bay the Gulf Production Co.'s No. 6 Hirsch is drilling around 4,815 feet and No. 10 State Land is at 3,455 feet. On Galliard Peninsula, the Humble Oil & Refining Co.'s No. 10 is at 3,185 feet, with a location for No. 9 and a derrick up for No. 17. Casing was set in No. 31 at 2,000 feet. The M. & B. Oil Co.'s No. 5 Scorrgea is around 2,000 feet. Keen and Wolf's No. 9 Schilling is at 2,235 feet. The Gulf Coast Oil Co. will work over No. 14 Galliard.

### Hardin County Pools

In the Batson Pool, the Ada Belle Oil Co.'s No. 109 Texas is pumping 65 bbls. at 1,050 feet.

The Gulf Production Co.'s No 1 Cruse, on the southwest side, is drilling around 3,090 feet. No 64 Choate is at 655 feet. The Paraffine Oil Co.'s No. 67 Paraffine is drilling around 1,090 feet. A derrick is up for No. 33 Heywood. The Ada Belle Oil Co.'s No. 110 fee is rigging. S. R. Buchanan's No. 91 Milhome is drilling at 1,135 feet. The East Batson Oil Co.'s No. 9 Counselman is below 1,200 feet

The Rio Bravo Oil Co.'s No. 11 Jordit, in the Saratoga Pool, bailed salt water at 1,450 feet.

In the Sour Lake Pool, the Gulf Production Co.'s No. 1-D McLean will pump at 3,925 feet, having shut off the salt water. The Humphreys Corp.'s No. 2-B Bashara is flowing 1,000 bbls. at 3,826 feet through ⅝-inch choker.

Humble Oil & Refining Co.'s No. 34 Hardin is bailing at 1,925 feet. The Minor Oil Co.'s No. 78 fee is pumping 6 bbls. at 500 feet. The first two named tests are in the light gravity section on the southwest side.

The Humphreys Corp.'s No. 3 Bashara is flowing 800 bbls., the corporation now having 3,800 bbls. daily production there. No. 4 is below 3,235 feet, with derrick up for Nos. 5 and 6. A derrick is also up for Nos. 5 and 6. A derrick is also up for No. 1 Giesecke. No. 2 Oxford-Kelly is at 1,765 feet. The Gulf Production Co.'s No. 1 Cora Jackson is at 2,980 feet and No. 2 is around 2,500 feet. Nos. 3 and 4 are rigging. J. F. Bashara's No. 1 fee is drilling at 3,900 feet and No. 2 below 2,890 feet. The Lake View Oil Co.'s No. 50 Hardin is at 1,675 feet. The Texas Company's No. 104 fee is rigging. The Orange Petroleum Co.'s No. 2 Merchant is rigging to start drilling.

### Liberty County Pools

In the west extension of the South Liberty Pool, the Humble Oil & Refining Co.'s No. 3 Welder is drilling around 3,235 feet. No. 4 Welder is at 2,545 feet. The Gulf Production Co.'s No. 1 Beckman is at 2,985 feet. The Associated Oil Co. has a location for No. 1 Tadlock. On the north side, the Premium Oil Co.'s No. 1 Mitchell is drilling around 4,270 feet.

### Hull Pool

In the Hull Pool the Republic-Houston Oil Co.'s No. 137 Dolbear, a workover, is pumping 75 bbls. at 2,600 feet. No. 138 Dolbear is going on the jack. The Empire Gas & Fuel Co.'s No. 21 Barngrover is bailing at 3,075 feet.

On the east side of the dome, the Republic-Houston Oil Co.'s joint No. 126 Dolbear is deepening at 2,200 feet. No. 39 is working over. No. 136 is drilling at 2,510 feet. No. 139 is below 2,200 feet. Gulf Production Co.'s No. 18 Hannah is at 3,288 feet. No. 19 is below 1,800 feet. On the Phoenix lease, on the southeast flank, No. 5 is drilling deeper at 2,980 feet. No. 62 is also deepening at 2,920 feet. No. 73 is drilling around 2,545 feet, and No. 74 is below 3,100 feet. The Texas Company's No. 1 Armlin is at 2,545 feet. Texas-Vacuum's joint No. 6 Hannah is drilling at 3,080 feet. Humble Oil & Refining Co.'s No. 1 Lynd is deepening at 4,400 feet. No. 2 Lynd and 5 Merchant are locations. Empire Gas & Fuel Co. has a location for No. 22 Barngrover. Houston Production Co.'s No. 10 Taylor is at 2,455 feet. Hull Oil Co.'s No. 11 Abel is drilling around 2,190 feet. Mecom Oil Co.'s No. 1 Searle is around 2,235 feet.

### Orange Pool

Two pumpers at extremely deep depths and two salt water wells comprise the week's work in the Orange Pool. The Rex Petroleum Co.'s No. 2-B Carbello will make a pumper at 4,000 feet, as will the Sun Oil Co.'s No. 2 Brown, in the southeast part, at 4,500 feet. Gulf Production Co. got salt water in No. 1 McGuire on the east side of Cow Bayou at 3,450 feet. Rycade Petroleum Corp. got the same in No. 1-C in Cow Bayou at 3,500 feet. It is on State land. Humble Oil & Refining Co.'s No. 25-B Chesson, reported as a 700-bbl. well at 3,600 feet, is now making 60 per cent water.

Texhoma Oil Co.'s No. 9 Chesson is drilling at 4,090 feet, and No. 16 is shut down at 4,600 feet. Orange Petroleum Co.'s No. 7 Chesson is at 3,900 feet. Humble Oil & Refining Co.'s No. 2 Winifree is at 3,090 feet. No. 10 Winifree is rigging to work over.

### Fort Bend County

In the Blue Ridge Pool, 12 miles southwest of Houston, Gulf Production Co.'s No. 6 West-Schenck, on the south side, is drilling around 3,600 feet. Humphreys Corp.'s No. 1 West-Schenck is at 655 feet. Attention was attracted to the south flank by the J. S. Abercrombie Co., which brought in a good well there last month that is still making

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## HALF DOZEN TESTS DRILLING DEEPER FOR 4,244-FOOT SAND AT SPINDLETOP

By P. L. McGreal

BEAUMONT, Tex., Sept. 27. — The daily average for the week of September 25 from the deep sands in the Spindletop Pool is placed at 92,000 bbls., a decrease of 5,921 bbls. compared with the previous seven-day period. And this despite the fact that approximately 16,200 bbls. of new production was added to the output during the week. However, the larger wells are choked in.

Half a dozen tests are drilling deeper for the 4,244-foot sand found last week by the Gulf Production Co. in its No. 4-A Weed. That well is pinched in to 3,700 bbls. The deep sand production is divided as follows:

| Company— | No. Wells | Daily Average |
|---|---|---|
| Yount Lee Oil | *23 | 34,151 |
| Gulf Production | 18 | 33,704 |
| Atlantic Oil Prod. | 6 | 11,260 |
| Rio Bravo Oil | 5 | 10,850 |
| Sun Oil Co. | 5 | 1,735 |
| Paggi & Co. | 2 | 300 |
| Total | 59 | 92,000 |

*Five wells on the southeast flank not included.

The Yount Lee Oil Co.'s No. 8 Gladys topped the sand at 3,600 feet, its initial flow being estimated at 10,000 bbls. 24 gravity oil. It has been choked down flowing through 1 inch choker. Same company's No. 3 Davis deepened to 3,490 feet responded with a flow of 4,000 bbls. Early in the week the Sun Oil Co. deepened No. 1 McLean to 3,313 feet and it started flowing 1,200 bbls. The Gulf Production Co.'s No. 2 Jack-Duff, near the south end of the development on the west side of the west Port Arthur road, came in at 3,400 feet, flowing 1,000 bbls.

Several wells that will make pumping propositions were completed. The Rio Bravo Oil Co.'s No. 6 Texas & New Orleans Railroad right of way, on the east side of of the west Port Arthur road, is one of these at 2,515 feet. The Deep Sand Oil Co.'s No. 2 Howell will pump at 3,240 feet, as will Watt and Wise's No. 1 McFaddin at 3,425 feet. The Gulf Production Co.'s No. 5-A Weed is another pumper at 3,275 feet.

Drilling crews boast of the quick time made in drilling wells with electrically operated rotary rigs on Gulf Production Co. leases. Several wells were drilled to a depth of 3,200 feet in 15 days. Electric pumping powers have also been installed.

The Gulf Production Co.'s No. 3 Roche is bailing at 3,075 feet. No. 4 Roche is idle at 2,490 feet. No. 2 will be deepened and No. 5 is drilling around 2,455 feet. Same company's No. 5 Oakwood is at 2,345 feet, with a derrick standing for No. 6. No. 4 Jack Duff is at 3,475 feet, a derrick is up for No. 5, and 6 is drilling around 3,600 feet. No. 7-A Weed is drilling around 1,145 feet, with locations for No. 6 and 8-A Weed.

### Drilling Deeper

The Atlantic Oil Producing Co.'s No. 1 McLean is drilling deeper around 3,365

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# May Extend Sunburst Field to West

## Pool Furnishes Two Big Wells, California Petroleum Co. Gets 4,000-Bbl. Producer, Largest in Central Section

By Frank B. Taylor
*Staff Correspondent, Rocky Mountain Area*

CASPER, Wyo., Sept. 25.—The Cosden interests have started a wildcat near Faith, S. Dak., Section 16-9-17, in the northwest part of the State. This well is to make a test of the Morrison formation and will likely be drilled to about 4,500 feet. H. V. Meabon, a Casper contractor, has charge of the drilling of the well and Will H. Weaver, contractor of camps and rigs, has placed the camp and rig for the well.

Mr. Meabon drilled several wells in the vicinity of Casper and the deep test completed last year on the outskirts of this city was put down by him. This well went to about 4,000 feet and had 2,500 feet of 10-inch casing in the hole when abandoned. All this pipe was recovered except about two joints at the bottom where the cement was placed. This well was an exception to the general run in the matter of drilling for the hole was put down in record time and the completion made without the usual run of bad luck. Will H. Weaver has been building rigs in the oil fields here for the past nine years and hails originally from Oil City, Pa., where he learned the trade.

The region in northwest South Dakota is a part of the shore line of the ancient inland sea and partly uplifted by the force that created the Black Hills. The Black Hills, which are in reality a range of granite mountains where the uplifting force failed to raise to the usual high elevation of other mountain ranges, form a series of terraces about the outer slope and at Osage and Morrcroft in Wyoming this terrace has been found productive of oil. Several tests in Nebraska and South Dakota failed to find production in commercial quantities but there are a number of good looking structures there that are recommended by competent geologists.

The Cosden wildcat now starting is on a structure recommended by Charles Lupton, a well-known geologist of Denver, Colo., who has had considerable experience both in the Government service with the Geological Survey and as a consulting and field geologist with private interests.

The Frontier sands of Wyoming are eroded away or thinned to nothing in South Dakota, but the Dakota and lower formations are in place.

### Gypsy's Garmesa Wildcat

The Gypsy Oil Co.'s wildcat, on Section 5-8-102, Garmesa Dome, Garfield County, Colorado, is still shut down waiting on the string of casing to be run before drilling further. In the meantime, the scouts and lease men are busy. This well is by no means the first well in that area. The Sun Oil Co. drilled a duster in Section 8-8-102 that found some gas in the Frontier sands but lost the hole a short depth below the Frontier due to a bad cementing job.

The Midwest Refining Co. drilled a duster on Section 36 7-103 that went through the Dakota formation, finding water, and later surveys tend to show that the Midwest well is located in a syncline between two highs on the main Carbonera structure. The Midwest then drilled a second test on Section 6 8-102 to about 500 feet deep, but when this hole reached this depth, the fire at the Cane Creek well in Utah destroyed the rig there and this rig was torn down and the well abandoned for the time being, the rig going to the Cane Creek well where it is now in service.

The Gypsy Oil Co.'s well, on Section 9 9-101, had a showing of oil in the Frontier sand at 2,600 feet that appeared worthy of a test. It was drilled to 3,500 feet and has been standing shut down.

### Rangeley District

In the Rangeley district, the Tide Water-Associated interests have reached 2,500 feet in a rotary well and struck a fissure where they lost the circulation and the Mancos shale is proving quite hard and has slowed up the work to about 21 feet daily.

The Midwest Refining Co.'s well, in this district, is drilling at 2,650 feet and expects to cement the 10-inch pipe at 2,950 or 3,000 feet. At this depth the crew expects to be only a few feet above the sand where the gas was found. The Texas Production Co.'s well is having trouble with the casing at 2,200 feet.

The General Petroleum Co. is starting an interesting test on the Paradox anticline in western Montrose County, Colorado, Section 4-48-18w (N. M. P. M.). This will be drilled with a rotary and a water system is now being laid for the work.

The Texas Production Co., on the Wilson Creek Dome, Section 27-3 94, started spudding the past week in the lower part of the Mesa Verde formation. The objective is the Dakota formation and the well must drill through all of the Cretaceous strata which is expected to be nearly 6,000 feet thick here. This structure is a large one with a gathering area of hundreds of miles so if production is found the field is expected to be a large one.

The Marland Oil Co., drilling in Section 34-4-92, on the Iles Dome, Moffat County, has spudded in. This test is on the upthrow side of a fault that cuts the south part of Iles and the Midwest Refining Co. produces oil from some wells in the Mancos shale on this structure. The Marland expects production in the Dakotas.

### Utah Operations

The Utah Southern Oil Co. and the Midwest Refining Co. are drilling again on the Cane Creek discovery well below Moab, Utah. The tools are in salt at 3,930 feet and the Shafer Dome well, 5 miles south, has about 300 feet of underreaming before it can set the 10-inch casing at 2,350 feet.

The Cedar Mesa well, being drilled for the joint account of the Utah Southern, General Petroleum and the Utah Oil & Refining Co., in San Juan County, Utah, has spudded in.

The Producers & Refiners Corp. brought in a new gasser in the Baxter Basin Field the past week, estimated at 12,000,000 feet. This new well is about 9 miles east of Rock Springs and extends the gas area of the Baxter Basin northeast about 10 miles.

On Section 33-1-70, the Repollo Oil Co. is at 4,730 feet and setting the 6¼-inch pipe at that depth.

The oil men appear to have given up the east side of the Rockies in Colorado. Some leasing is being done in the southeast corner on the strength of the geological conditions there that are somewhat similar to the Amarillo district in Texas, but the main interest appears to be over the Divide on the western slope, where the Utah developments have drawn attention of operators.

### Salt Creek Producers

The Midwest Refining Co. completed seven new producers in Salt Creek the past week. The Midwest Oil Co. has an 85-bbl. well on Section 23-40-79, at 1,183 feet, and one on Section 35-40-79, that will make a pumper from 1,164 feet. The same firm drilled a well to the Lakota sand on Section 35-40-79, finding the top of the sand at 2,413 feet and this was shut in. On Section 12-40-79, the company has an average second Wall Creek sand well at 2,265 feet that will be pumped.

The Wyoming Associated Oil Co. and the Midwest Oil Co. drilled a joint well on Section 36-40-79, finding production at 1,325 feet, starting off at 145 bbls.

The Salt Creek Consolidated Oil Co. brought in a producer on Section 3-39-79, at 1,650 feet and will shoot to pump. Wyoming Associated Oil Co. drilled to the Lakota sand on Section 26-40-79 and found production in the shale above the Lakota at 2,225 feet that will make 200 bbls.

### Big Wells in Sunburst

In Montana, the Sunburst Field furnished two big wells. The new company to enter the Sunburst Field, the California Petroleum Co., which recently purchased the O'Neil interests, found a big gusher on Section 27-35-2, that started off at 4,000 bbls. and is by far the largest well completed in the central part of Sunburst Field. The pay was found at 1,590 feet.

The Homestake Exploration Co., (Texas & Pacific Coal & Oil Co.) has a 1,200-bbl. well on Section 36-35-2, producing from a stray sand above the Ellis sand where most of the production is coming from. The importance of the Homestake well is considered very great by operators as the well lies west of the big pool and extends the area west of the present development and south of the central part of the field.

The areas on both sides of the Sunburst Field, east and west, have been receiving much attention of late and leasers and scouts are examining conditions over an area roughly computed as 750 square miles on the supposition that the Sunburst Field is not the only gravational petroleum area in northern Montana. Wildcats drilled 10 miles west of Sunburst the past summer show that the Ellis sand is still in situ that far west and while it contains water, there is no reason why, if conditions favored oil accumulations, there should not be another Sunburst Field west. The same conditions prevail to the east as far as the wildcatters have tested the strata.

**ROCKY MOUNTAIN FIELD**
**Daily Average Pipeline Runs**
**Wyoming**

| | |
|---|---|
| Teapot | 1,150 |
| Big Muddy | 3,330 |
| Grass Creek | 3,130 |
| Elk Basin | 840 |

(Continued on Page 117)

# JUMPING POUND AREA MAY BE DEEPER THAN EVEN THE TURNER VALLEY FIELD

By Victor Lauriston
*Staff Correspondent, Canadian Fields*

CHATHAM, Ont., Sept. 25.—In the Turner Valley Field, southwest of Calgary, Royalite Oil Co. No. 4, LSD 12, Section 7-20-2w5, in August produced 14,580 bbls. of crude naphtha, compared with 14,551 bbls. in July; with an estimated daily production of between 18,000,000 and 19,000,000 feet of wet gas. Production figures of the Royalite Oil Co. for August show a shipment from the Royalite plant of 535,310 imperial gallons of 73 degrees naphtha or casinghead gasoline. Of this production about 24,000 gallons were extracted from the wet gas of the Royalite wells and 460 bbls. bought from McLeod No. 2 well, the remaining shipments, approximately 510,310 imperial gallons, coming from Royalite No. 4.

Royalite Oil Co. No. 5, LSD 13, Section 7-20-2w5, is fishing at 3,572 feet. Royalite No. 6, LSD 16, Section 31-19-2w5, is working on casing at 3,079 feet. Dalhousie Oil Co. No. 1, LSD 4, Section 18-20-2w5, is at 3,582 feet and drilling. The drillers are preparing to abandon Dalhousie No. 3, LSD 10, Section 13-20-3w5, at 3,345 feet, owing to casing troubles. Dalhousie No. 5, LSD No. 16, Section 30-19-2w5, is at 2,240 feet and running 12-inch casing.

Outside the Turner Valley Field, drilling operations by Imperial Oil, Ltd., are making steady progress. In the Jumping Pound district 25 miles west of Calgary, Imperial-Bow River No. 1, LSD 15, Section 12-25-5w5, is reported at 3,780 feet and drilling. The gas show, previously reported in this well, is officially stated to have amounted to 350,000 feet a day, and is being utilized as fuel for drilling purposes. It was encountered at 3,568 feet, and is apparently a dry gas. The Imperial-Bow River No. 1 is, contrary to earlier unofficial reports, not yet in the deep limestone, which indicates that the Jumping Pound area may be a deeper field than even the Turner Valley.

In the Highwood district, Imperial-Highwood No. 1, LSD 3, Section 36 18-3w5, is at 200 feet and running 20-inch casing.

### Second Deepest Test

In the foothills west of Nanton, the Imperial-Rice Creek deep test is reported at 4,960 feet and drilling. It is now stated to be the second deepest test in Canada, the Dominion record for deep drilling being held by the Empire Natural Gas Co. test in the Fraser Valley, British Columbia, which reached 5,743 feet depth.

In the Border Field, the Imperial-Erickson Coulee test, LSD 13, Section 8-1-12w4, is reported below 2,440 feet and running 8-inch casing. In the Foremost Field, the Imperial-Burdett No. 1, Section 8-11-11w4, is at 2,600 feet and drilling.

In the Ribstone Field, eastern Alberta, Imperial Ribstone No. 1, Section 4-45-1w4, which spudded in last week, is reported at 210 feet and drilling.

Interest in the Turner Valley Field now centers in the Vulcan No. 1 producer, LSD 11, Section 13-20-3w5, which has a fair production of wet gas with some incidental light crude. The test, which topped the gas horizon in the deep limestone at 4,930 feet, got a wet gas flow estimated at 3,000,000 feet a day, and has since been shut down while the boiler was moved back from the well and a heavy control valve put in place. It is now being drilled in. A separator is being installed to handle the wet gas. Considerable oil is sprayed from the well under gas pressure, and incomplete tests show that this is a light amber oil, heavier than the crude naphtha from the Royalite gusher, and tests of the samples indicate a 49 gravity crude, similar to

(Continued on Page 78)

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BETTER BE SAFE THAN SORRY

# Race to Huntington Beach Deep Sand

## Spectacular Gas Blowout by Petroleum Securities Co.'s No. 1 Montgomery. Operators May Pass Up Shallow Zone

By L. P. Stockman
*Staff Correspondent, California Fields*

LOS ANGELES, Calif., Sept. 25.—Although there were no developments of interest so far as the deep sand is concerned in the southwest extension of the Huntington Beach Field during the past week, operators were greeted with a rather spectacular gas blowout when No. 1 Montgomery of the Petroleum Securities suddenly broke loose while standing cemented at 3,100 feet. The source of the gas is unknown, although it is believed to have entered the hole at about the 2,000-foot level as the gas was blowing out between the 10 and 15-inch casing. Friction ignited the gas a short time after the well started blowing and, although the derrick toppled over and was wrecked due to the terrific heat, it is not believed any further damage has been occasioned. The company has already started cleaning up the debris and the field superintendent is of the opinion the loss will not exceed $10,000, as all indications pointed to a successful shutoff on the 10-inch which, if correct, means the hole is in good shape.

The race down to the deep sand started as a result of the completion of a 1,000-bbl. well by the Wilshire company a few weeks ago is proving a merry one and some fast drilling records are being established. Every one seems quite anxious to be the next to reach the pay in order to get in on whatever flush production may be secured and in one or two instances crews have been promised a substantial bonus and it is needless to say this is having the desired effect. E. J. Miley, who probably has one of the most efficient engineering staffs in the state, has taken his No. 1 Pacific Electric off production in the upper sand and will carry it down without delay. No further attempt will be made to produce from the upper sand on this lease and as a result, Nos. 1, 2, 3 and 4 will have the lower horizon as their objective. No. 2, by the way, is scheduled to be cemented within a day or so and may possibly be on production before the close of next week.

### To Pass Up Shallow Sand

The Standard will also probably pass up the shallow zone since its two initial completions in this sand have proved quite unsatisfactory as both registered a very substantial decline. These two wells are still on the beam but it is quite possible they, together with the six or eight additional drillers in this area, will be carried down to the lower horizon as soon as possible. The Standard's drilling program in the town lot area calls for something like 25 wells, practically all of which are necessary to protect the company's acreage from drainage. Up to the present only eight wells have been spudded in but it is likely the remainder will be started downward as soon as another producing well is finished. In other words, it is unknown just how far the productive limits of the extension will extend, and in view of this condition it would be rather unwise to undertake any further work until a second well has been finished.

The Petroleum Securities, which has established a remarkable drilling record in all the southern California fields, in which the company has operated, has announced its intention of passing up the shallow zone entirely and will concentrate its efforts on reaching the Wilshire sand with as little delay as possible. This company's work at Torrance and Inglewood are of too recent origin to require comment, but if the company's operations in these two areas is any criterion as to what will be accomplished at Huntington Beach, operators holding offset acreage should not lose any time in getting under way. It is quite evident that George F. Getty is also going to pass up the shallow zone and it looks as though the California Petroleum will follow a similar procedure.

The Julian Petroleum has been unusually slow in getting under way but it is quite possible the company has been holding off waiting for something tangible to develop. Work was immediately speeded up, however, as soon as the Wilshire brought in its initial deep well and it is believed the Julian Petroleum will have eight or nine wells drilling before the close of the week. The Superior Oil Co. is stepping right along and, judging by the rapidity with which new rigs are going up, will have something like 15 wells under way within two weeks. The company is running 10 strings of tools, No. 71 Gillette and No. 1 Gilmore having just passed the 3,500-foot level.

The McKeon Oil Co.'s No. 1 Huntington, now standing cemented at 3,652 feet, is expected to come into production momentarily, although it is likely E. J. Miley's No. 2 Pacific Electric will have the distinction of being the second deep well finished in the town lot area. The Wilshire's No. 2 Huntington picked up the top of the lower zone at 3,575 feet and it is looking exceptionally good with an excellent chance of resulting in a good well within 10 days. Nos. 3 and 4 are but a short distance behind and will probably come into production within two or three weeks, as each will require about 700 feet of hole and another cement job. A check of present development work indicates there are 9 wells making hole under 1,000 feet, 6 between 1,000 and 2,000 feet, 10 between 2,000 and 3,000 feet, and 41 drilling ahead below the 3,000-foot level. Rigs are standing for 22 additional wells, many being rigged up for early work.

### Ventura

The feature in connection with the drilling in the Ventura Avenue Field at present is the work done by the Associated on No. 33 Lloyd. This hole has been carried down to 6,261 feet and if successfully completed will be the deepest producing well in the Ventura Avenue Field and, judging by the kick it is showing, may also register the largest initial daily production. The well has been literally flooded with hematite, called "liver" by field men because of its blood-red color, in order to minimize the chances of it getting away while the oil string is being run in. Operators are intensely interested in the outcome as it has approximately 1,000 feet of sand from which to draw and has an excellent chance of making a wonderful showing. It is rather difficult to get a line on the Associated's next completion in this area due to the fact that Nos. 32, 38 and 45 on the Lloyd lease are all within a few feet of one another. No. 32 has a slight advantage at 5,200 feet and may possibly be the first of this trio to come into production.

The Associated's No. 2 McGonigle in the extreme eastern part of the field picked up the top of the deep sand at 5,260 feet, the importance of which lies in the fact that it will extend the northern limits of the field. No. 1 Willett and No. 1 Orton of the Petroleum Securities on the south flank of the field are still somewhat of a problem and recent developments are not considered particularly favorable to their completion. The Associated's McGonigle just referred to, together with correlations of other key wells, indicate the field extends further north than has been generally believed. Contour intervals tend to indicate both wells are too far south, although it is very nearly impossible to make any very accurate correlations between the various well logs. Recent developments have shown the northern limits of the field are far from defined at present, while completions in the southern area have not been very successful. The State Board of Control has just asked for bids on 125 acres of land in the northern part of the field adjoining the State School for Girls. The lease will be of 20 years duration and will be awarded to the highest bidder, both the royalty and cash bonus being considered.

### Being Offset on All Sides

Due to the activity of the Shell and Associated in drilling up line wells, the General Petroleum has found it necessary to pursue a rather intensive drilling campaign to protect its Barnard lease from undue drainage. This property is being offset on all sides, the Associated's Lloyd lease lying to the east, the Shell's Gosnell property to the south and its Taylor lease to the west. The Bolsa Chica is drilling along the north line, while the Ventura Associated is drilling on a strip in the northwest corner. As a result of this forced work, the General Petroleum is in a position to increase its daily production very substantially and will probably do so within 30 days, as two or three deep wells should be finished during this period.

The Shell should finish no less than three wells in this field during the next three weeks and, unless restrictive measures are taken, will add several more before the close of the year. The Bolsa Chica Oil Co. cemented a string of 11-inch in No. 2 Hartman at 3,674 feet and is moving the rotary table and other equipment over to No. 1 preparatory to carrying it down to the 6,000-foot level in the hope of stimulating production. This lease, at one time considered hardly warranting work, is looking better every day and it would not be surprising if the entire property proved productive instead

(Continued on Page 73)

**IMPORTANT SOUTHERN CALIFORNIA WILDCATS**

| Company, Well, Location— | S-T-R | Depth | Status |
|---|---|---|---|
| Union, No. 1 Bryant, Seal Beach | 2- 5-12 | 5,538 | br. sh. drilling |
| Marine, No. 1 Strong, Bellflower | 24- 3-12 | 4,947 | br. sh. drilling |
| Feather, & Preston, No. 1 Blinn, Clearwater | 16- 3-12 | 4,185 | suspended |
| Union, No. 1 Howland, El Segundo | 24- 2-15 | 5,197 | sd. sh. fishing |
| Smith Pet. Co., No. 1 Johnson, Hawthorne | 17- 3-14 | 4,500 | hd. sd. drilling |
| Associated, No. 1 Cypress, Inglewood | 34- 2-14 | 3,700 | slight show |
| Dominguez Exten., No. 1 Compton, Dominguez | 27- 3-13 | Rig | rigging up |
| Riner, H. E., No. 3 McDermott, San Bernardino | 32- 2- 8 | 420 | hd. sd. drilling |
| Milham Explt'n., Well No. 2, Del Rey | 34- 2-15 | 6,017 | redrilling |
| Barnsdall, No. 1 Merlo, Puente | 35- 1-11 | 4,503 | hd. sd. drilling |
| Petroleum Sec., No. 1 Sesnon, San Fernando | 14- 2-16 | 3,789 | hd. sd. drilling |
| Standard, No. 1 University, San Fernando | 15- 2-15 | 4,100 | hd. sd. drilling |
| Standard, No. 1 Austin, Topango | 11- 1-17 | 1,550 | hd. sd. drilling |
| Union, No. 1 Saugus, Saugus | 15- 4-16 | 3,840 | br. sh. drilling |
| Union, No. 2 Olinda, Orange Co. | 10- 3- 9 | 5,490 | unfavorable |
| Oceanside Oil Co., No. 1 Pacific, San Diego | 23-11- 5 | 3,126 | hd. sd. drilling |
| Halfhill Packing Co., No. 2 Jeffries, Burbank | 2- 1-15 | 1,250 | suspended |
| Sou. Calif. Dig. Co., No. 1 Matteson, El Segundo | 1- 3-15 | 100 | drilling |
| Calif. Pet. Dev., No. 1 Spitz, Capistrano | 2- 8- 8 | 2,096 | gr. sd. suspended |
| Petroleum Sec., No. 1 De Baker, Bandini | 18- 2-12 | 150 | drilling |
| Van Nuys, No. 1 Community, Van Nuys | .. .. .. | 3,734 | hd. sd. |
| Julian, No. 1 Mosier, Athens | 13- 3-14 | 132 | drilling |

**IMPORTANT NORTHERN CALIFORNIA WILDCATS**

| | | | |
|---|---|---|---|
| Union, No. 2 Theta, Kern County | 23-28-20 | 2,183 | survey hole |
| Taylor, W. W., No. 1 Clovis, Fresno County | 5-13-22 | 1,250 | hd. sd. drilling |
| Associated, No. 2 Huron, Fresno County | 20-19-17 | 1,198 | clay, drilling |
| Federal Explt'n., No. 1 Kinsella, Tulare Co. | 15-22-24 | 2,821 | hd. sd. drilling |
| Bolsa Chica, Well No. 1, Kettleman | 30-23-19 | 2,360 | pumping test |
| Marland, No. 1 Elliott, Kettleman | 12-22-17 | 5,570 | reaming |
| South Coalinga, Well No. 1, Kettleman | 35-24-19 | 1,383 | bl. sh. suspended |
| Shell, No. 1 Berlywood, Moorpark | 32- 3-20 | 6,359 | unfavorable |
| C. C. M. O., No. 1 Hobson, Ventura County | 22- 3-24 | 5,855 | bad fishing job |
| Milham Explt'n., No. 1 Sexton, Ventura Co. | 19- 3-22 | 6,017 | set 6¾-inch |
| Milham Explt'n., No. 1 Buttonwillow, Kern | 8-28-23 | 109 | drilling |
| Standard, No. 1 Palmer, Santa Barbara | 13- 9-23 | 2,845 | cemented |
| Standard, No. 1 Carmarillo, Ventura Co. | .. .. .. | 2,720 | conglom. drlg. |
| Standard, No. 1 McGrath, Ventura Co. | 18- 2-22 | 2,140 | abandoned |
| Pan American, No. 1 White, Monterey Co. | 27-23-13 | 2,503 | hd. sd. drilling |
| Pyramid, No. 1 Trescony, Monterey Co. | 26-21- 9 | 2,881 | gr. sd. drilling |
| Shell, No. 1 Murphy, Petaluma | 29- 5- 6 | 2,779 | hd. sd. drilling |
| Miley Explt'n., No. 2 Casitas, Ventura Co. | 7- 3-25 | 604 | fishing |
| Miley Explt'n., No. 1 Goleta, Santa Barbara | 3- 4-29 | Mtl. | building rig |
| Rio Grande, No. 1 Canet, Ventura Co. | 9- 3-23 | 1,735 | fishing |
| Sentinel, No. 1 Tejon, Ventura Co. | 5- 5-17 | 562 | suspended |
| Woodward & Sheedy, No. 1 Famosa, Kern Co. | 29-27-26 | 1,251 | bl. sh. drilling |
| Henderson Pet., No. 2 Piru, Ventura Co. | .. .. .. | 1,108 | hd. sd. drilling |
| Ozena, No. 1 Allensworth, Tulare Co. | 26-24-24 | 403 | hd. sd. drilling |
| Union, No. 1 Gill, Famosa | 8-28-27 | Rig | rigging up |
| Parkford, E. A., No. 1 Strathern, Ventura | .. .. .. | Rig | rigging up |

**TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS**

| Commodity— | Total This week | Daily Average | Total Last week | Daily Average | This year To date | Same time Last year |
|---|---|---|---|---|---|---|
| Crude oil | 286,484 | 40,926 | 174,922 | 24,989 | 8,979,135 | 11,446,428 |
| Fuel and gas oil | 199,495 | 28,358 | ..... | ..... | 7,622,940 | 237,873 |
| Gasoline | 164,762 | 23,537 | 209,605 | 29,943 | 5,391,776 | 6,026,772 |
| Tops | 72,530 | 10,361 | ..... | ..... | 147,149 | 484,650 |
| Coastwise— | | | | | | |
| Crude oil | 264,403 | 37,772 | 446,874 | 63,839 | 16,848,895 | 23,430,097 |
| Fuel and gas oil | 126,271 | 18,039 | 111,121 | 15,874 | 7,899,559 | 8,338,492 |
| Gasoline | 79,278 | 11,325 | 181,951 | 25,993 | 5,477,257 | 3,614,839 |
| Kerosene | ..... | ..... | 19,168 | 2,738 | 194,209 | 244,136 |
| Tops | ..... | ..... | ..... | ..... | 620,124 | 128,986 |
| Exports— | | | | | | |
| Crude oil | 226,612 | 32,373 | 64,982 | 9,283 | 4,210,254 | 1,786,864 |
| Fuel and gas oil | 224,033 | 32,005 | 271,619 | 38,803 | 13,051,714 | 11,116,244 |
| Gasoline | 97,644 | 13,949 | ..... | ..... | 3,747,177 | 2,942,523 |
| Tops | ..... | ..... | 96,552 | 13,793 | 96,552 | 170,467 |
| Kerosene | 118,568 | 16,938 | ..... | ..... | 1,878,678 | 1,737,711 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fuel and gas oil | 146,658 | 20,951 | ..... | ..... | 1,251,282 | 218,414 |
| Gasoline | ..... | ..... | ..... | ..... | 758,222 | 1,036,369 |
| Tops | ..... | ..... | ..... | ..... | 229,775 | 794,918 |
| Lubricants | 59,611 | 8,516 | ..... | ..... | 335,228 | 235,533 |
| Coastwise— | | | | | | |
| Fuel and gas oil | 207,115 | 29,588 | 72,994 | 10,428 | 3,284,645 | 2,723,931 |
| Gasoline | 130,299 | 18,614 | 28,187 | 4,027 | 3,341,501 | 1,894,067 |
| Kerosene | ..... | ..... | ..... | ..... | 276,582 | 145,776 |
| Exports— | | | | | | |
| Fuel and gas oil | 47,915 | 6,845 | 125,572 | 17,939 | 2,529,165 | 1,775,375 |
| Gasoline | ..... | ..... | ..... | ..... | 1,166,681 | 459,361 |
| Kerosene | ..... | ..... | ..... | ..... | 1,462,561 | 723,316 |
| Lubricants | ..... | ..... | ..... | ..... | 8,759 | 243,429 |

# Jim Hogg Producer Flows 500 Bbls.

## Eight Completions in Randado Field Add 955 Bbls.
## No. 6 Walsh in Piedras Pintas Pumps 275 Bbls. a Day

By B. D. Stevenson
*Staff Correspondent, Southwest Texas Fields*

SAN ANTONIO, Tex., Sept. 27.—In the proven fields of southwest Texas the past week the biggest and most important completion is the K. & S. Corp.'s No. 47 Holbien, in Jim Hogg County, which at 2,145 feet is said to be flowing at the rate of 500 bbls. The production is a little heavier than most of the completions there but the depth is regular. In the Randado Field, in Jim Hogg County, there were eight completions last week adding a total of 955 bbls. to the production. Simms company got only a 10-bbl. well when it plugged back No. 4 Weil to 1,304 feet in that pool and the same company's No. 14 Palacious is a 70-bbl. well at 1,289 feet. Wheelock & Collins got a 75-bbl. well in No. 4 Palacious at 1,250 feet. The other five wells were better. Wheelock & Collins got a 125-bbl. well in No. 6 Palacious at 1,244 feet, and Houston Gulf Gas Co., a 125-bbl. well in No. 13 Palacious. Johnson and others (American Well & Prospect Co.) got a 100-bbl. well at 1,272 feet in No. 9 Palacious and a 250-bbl. well in No. 10 Palacious at 1,270 feet and a 200-bbl well in No. 12 Palacious at 1,284 feet.

**Bruni Extension**

In the Bruni tract extension of the Aviator Pool, in Webb County, Harper and others, on Survey 123, got a 2,000,000-foot gas well at 1,660 feet and Verdine and others got a 5,000,000-foot gas well at 1,510 feet and both are drilling deeper. The only oil well completed in that field was Ruthada's No. 7 Bruni, at 1,735 feet, which is estimated at 90 bbls.

In the Piedras Pintas Salt Dome territory at Noleda, where the Humble last December brought in No. 4 Walsh as a discovery well, it has succeeded in getting No. 6 Walsh on the pump, pumping at the rate of about 275 bbls. a day. This is the first successful completion in the field since the discovery well, though several dry holes have been drilled around the discovery well. The depth is around 3,600 feet.

**Laredo District**

Among the failures and abandonments in the Laredo district the past week, were Crown Central-Staley & Wynne's No. 4-B Bruni, in Block 14, which was dry at 1,730 feet. C. O. Maddox and others abandoned No. 1 Laurel, in Survey 333, a few miles south of the Carolina-Texas Field in Webb County, at 3,040 feet. It tested salt water. Simms Oil Co. abandoned No. 2 Dinn in Duval County in Survey No. 62, 5 miles north of the Cole Field, at 2,885 feet. It is a little to the east of No. 1 Dinn, which made over 7,000,000 feet of gas at about 1,750 feet.

**Carolina-Texas Field**

In the Carolina-Texas Field, The Texas Company is standing at 2,614 feet in No. 3 Webster and is drilling No. 2 deeper, being now at 3,028 feet. Both were dry at 2,600 feet where the Associated-Carson discovery well is producing.

A little further disappointment was registered in the Carolina-Texas Field in Webb County the past week when the Winch and Killam well, in the center of the east half of Survey No. 336, located about a mile north of the Associated-Carson discovery well, failed to produce at 3,044 feet. It was bailed to the bottom. The last core indicated a possible gas well at the least. The discovery well of Associated-Carson is producing at a depth of 2,600 feet and is flowing about 200 bbls. a day. The Texas Company's No. 2, two locations to the east, failed to make more than an 8,000,000-foot gas well at 2,614 feet, and drilled to around 3,000 feet and has failed to show anything favorable so far. There are three big gas wells in the field producing at about 3,000 feet. Moody Oil Co., in Survey 688, 3 miles off to the south, is also in the 3,000-foot stuff and has failed thus far to make anything.

Production in the Mirando Field for August averaged 16,291 bbls. per day from a total of 552 wells from pools located in Webb, Zapata, Jim Hogg and Duval Counties. The Magnolia Pipe Line Co. for August ran 133,025 bbls., and Humble, 186919 bbls., Crown Central Corp., 60,985, bbls., Laredo Oil Co., 964 bbls., Houston Oil Co., 5,667 bbls., Randado Pipe Line Co., 33,926 bbls., making a total for the month of August 505,038 bbls., and the total runs from the Mirando Field since the first well was brought in some years ago, 9,952,758 bbls.

**Cole Gas Field, Duval County**

O. W. Killam's No. 5 Lopez, Survey 319, Block 8, which tested salt water and a small show of oil at 1,783 feet, is plugging back, and the derrick is up for No. 6 Lopez, 2,050 feet from east and 150 feet from north lines, Survey 319.

**Piedras Pintas Field**

In Duval County in the Piedras Pintas Field, Humble Oil & Refining Co.'s No. 1 Becher, Survey 531, is drilling at 2,841 feet. Gulf Production Co. is making location for its No. 1 Tinney.

**Randado Pool, Jim Hogg**

Andrews Petroleum Co.'s No. 1 Palacious, Survey 291, is standing at 1,286 feet. It is in NE cor. of the lease block. Grayburg Oil Co.'s No. 6 Weil, NW cor. Block 15, Survey 81, is testing at 1,542 feet and No. 7 Weil, SE cor., has derrick up. Johnson and others, 150 feet from NW cor., in No. 12 Palacious, is at 1,303 feet. Houston Gulf Gas Co.'s No. 12 Palacious, Block 11, Survey 291, is a deep test drilling at 2,635 feet. M. J. Bashara's No. 2 Weil, Survey 81, Block 8, 150 feet from the NE cor., has spudded in. Simms Oil Co.'s No. 14 Palacious, Survey 291, is testing at 1,290 feet, and No. 15 Palacious is a location. No. 4 Weil, Block 16, Survey 81, by the same company, is running tubing at 1,303 feet. It has been cemented back. On Block 16, Survey 81, derrick is up in the NE cor. for No. 5 Weil. On Block 8, Survey 81, location has been made for No. 6 Weil, and on Block 7 for No. 7 Weil. Magnolia Petroleum Co.'s No. 8 M. S. Banks, (reported last week as No. 7) in Survey 415, is coring at 1,255 feet, and in Survey 291 No. 12 de la Garza is drilling at 750 feet. Smith-Maddox on their lease block in Survey 291, has made location for Nos. 11, 12, 13 and 14 Palacious. Alworth Brothers' No. 1 Garza in Survey 39 has derrick up.

**Henne, Winch & Fariss Pool**

In Jim Hogg County in the Henne, Winch & Fariss Pool, Magnolia Petroleum Co.'s No. 14 Killam-Martinez, Survey 276, 300 feet east of No. 12, is rigging up and derrick is up for No. 15 "B" Martinez, and location has been made for No. 16 "B" Martinez. Humble Oil & Refining Co.'s No. 1 Vela, Block 5, Survey 5, is drilling at 500 feet. Rydal-Rycade interests' No. 4 Vela, Block 12, Survey 1, is moving on.

**Kitselman & St. Albans Pool**

Kitselman & St. Albans in Block 13, Survey 15, are drilling at 2,018 feet in No. 46 Holbien, and on Block 6, Survey 11, No. 47 Holbien is drilling at 2,000 feet. Derrick is up for 48, Block 5, Survey 11, and location is being made for No. 49 and No. 50 Holbien, Survey 16, Block 19, is moving on.

**Bruni Field, Webb**

Ruthada Oil Co.'s No. 7 Bruni in east half of Block 18, has set casing in sand at 1,725 feet. In Survey 835, Harper and others' No. 1 Bruni is testing at 1,656 feet. O. A. Topham, Survey 2,048, Block "C," has spudded in No. 1 Bruni, SE cor. Gibson Oil, on Block 13, west half, is standardizing No. 16 Bruni. Sun Oil Co. is moving on Block 44 for No. 6 Bruni in NE cor. Crown Central-Staley's No. 4 "B," Block 14, is drilling at 200 feet and No. 19 Bruni, Block 17, has derrick up. On Block 44 it is moving on for No. 18 Bruni.

**Older Mirando Pool**

Crown Central's No. 10 Garcia, Survey 606, Lot 56, is drilling at 3,100 feet, and in Block 27 derrick is up for No. 13 Garcia. Murchison & Fain's No. 2 Garcia, Survey 58, is drilling at 800 feet.

**Carolina-Texas**

In the Carolina-Texas Field in Webb County, Associated Oil Co.'s No. 1-B Webster is drilling at 1,597 feet. The Texas Company's No. 2 Webster, which made a gas well at 2,614 feet with a spray of oil, is drilling deeper. The Texas Company is also deepening No. 1 Webster, which made 8,000,000 feet of gas with an oil spray at 2,614 feet. Depth of the discovery well of the field was 2,600 feet.

Moody Oil Corp.'s No. 1 Benavides, Survey 688, is drilling at 3,014 feet. Hazlitt-Simmons' No. 1 de la Garza, Survey 335, Block 11, NW cor., is coring at 2,332 feet. U. S. Gas & Oil Co.'s No. 1 S. Benavides, Survey 679, has finished a fishing job at 2,750 feet, and resumed drilling. Henne, Killam & Winch's No. 2 de la Garza, Survey 336, Block 11, SE cor., bailed dry at 3,044 feet. In Survey 684, NE NW, Magnolia's No. 1 Webster, 150 feet from the south and east lines, which made 8,000,000 feet of gas at 2,600 feet, is drilling at 2,621 feet. S. O. M. Oil Co.'s (Morgan-O'Hern-Seacord) No. 1 Webster, 150 feet from the south and east line of its 15-acre lease in Survey 684, which was abandoned as a small gas well at 2,600 feet, is drilling deeper.

**Cole Gas Field**

In the Cole Gas Field in Webb County, the Cole Petroleum Co.'s No. 23 Benavides, Block 8, Survey 8, 150 feet from the southwest and northwest lines, has been abandoned at 2,225 feet and location has been made, Survey 16, Block 3, for No. 21 Benavides and in Survey 11, Block 13, for No. 19 Benavides. No. 19 Benavides is 155 feet from the west and east lines, and No. 21 Benavides is 150 feet from the east and west lines.

**Ina Field, Medina**

In the Ina Field in Medina County, 300 feet north from Arnett No. 3 The Texas Company is drilling on the Viola Wilson farm. It will be used as fuel oil and will later make a deep test. Arnett Oil Co.'s No. 4 Nixon, on which the company has been working for some time, is 2,100 feet south of No. 3. Well has been plugged back and 4-inch casing will be run to shut off salt water and then be tested again.

# DUVAL COUNTY TEST TO BE DRILLED IN SIX MILES SOUTH OF THE COLE FIELD

By B. D. Stevenson

SAN ANTONIO, Tex., Sept. 27.—O'Hern & Seacord will this week drill in their second test on Survey 174, in Duval County, 6 miles south of the Cole Field, where their first well, completed a few weeks ago at 1,765 feet, made a big gas well spraying some oil. No. 2 is north of No. 1 and it hit rock at 1,782 feet. There was 2½ feet of the rock. Under the rock they cored to 1,789 feet and got a sand showing oil that is considered to look pretty good. Casing was to be set last Saturday and after letting the cement set 72 hours it was the plan to drill in about Tuesday of this week or possibly Wednesday. The nearest production is the Cole Field to the north and the results of the test of this well promises to be the feature of the week, and result in either a new oil pool being found or a disappointment. Since the bringing in of the first well, a gasser making some oil, the Associated has started rigging up a little over a mile to the northwest and Buffum and associates are drilling at 500 feet, about 2 miles to the northeast. A number of major companies contributed to the drilling of the first well by taking protection acreage and most all of the big companies operating in the Laredo territory have protection around the well but the most of the acreage is owned by O'Hern & Seacord, the owners of the well.

**Edwards County Showing**

Another feature of the week was the getting of a little oil showing in the well of X. K. Stout, of the Anglo-Texas Oil Co., in Edwards County, several miles east of Rock Springs. The well was drilled with cable tools and the oil showing came up on the bailer at 4,225 feet. The well is in the Pennsylvanian lime. The well had about reached contract depths when the showing was had. There seems not to have been enough of it to make a well and it is continuing drilling. Its importance lies in the claim of some geologists that this territory to the southwest of the Llano uplift has the Bend arch formation similar to that on the north side of the Llano uplift in the area that includes the north Texas oil fields and that this similarity of geological conditions warrants an expectation of production. Dixie Oil Co. recently acquired a 60,000-acre block in Edwards County, some miles southwest of the Stout well and is drilling in Kimble County, the next county north and the Sun Oil Co. is preparing to drill in Kimble County. The formation with the oil showing in the Stout well was identified by Leslie N. Shaw, geologist of San Antonio, as Smithwick shale.

L. M. Holden's wildcat well in Jim Hogg County, several miles east of Hebbronville, which at 3,140 feet was attracting attention as a possible gas well in wildcat territory tested fresh water. First reports were that it was salt water. It has resumed drilling.

**Starr County Activity**

Starr County is now beginning to get the long delayed drilling campaign promised down there, the delay being due mainly to difficulty in straightening out titles. The Texas Company has the rig on the ground and is laying a water line from the Rio Grande, 2 miles north to its location on the H. A. Russell land in Share No. 173-B, in Porcion No. 69. The block of several thousand acres was got together by the Southern Exploration Co. and a half interest sold to The Texas Company. C. O. Maddox will drill in Survey No. 232, in a block of leases owned by Danciger Oil & Refining Co. Simms Oil Co. is rigging up

(Continued on Page 105)

# CP Compressors for Flowing Wells

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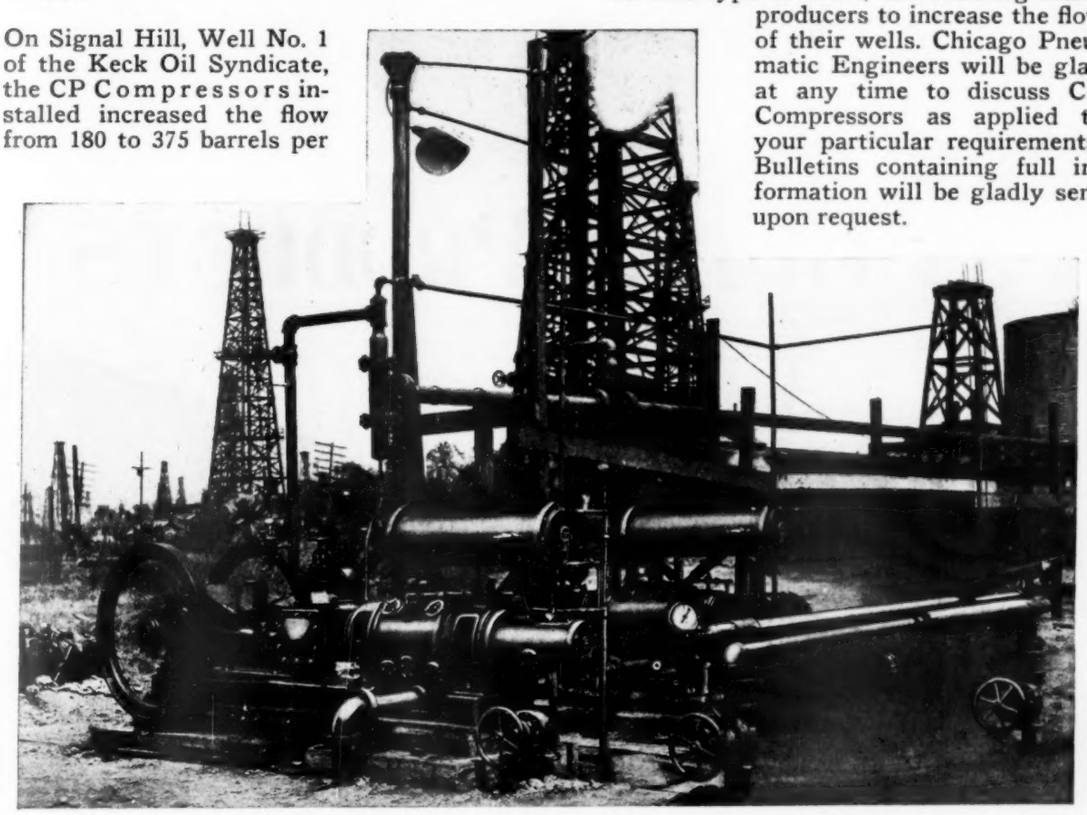

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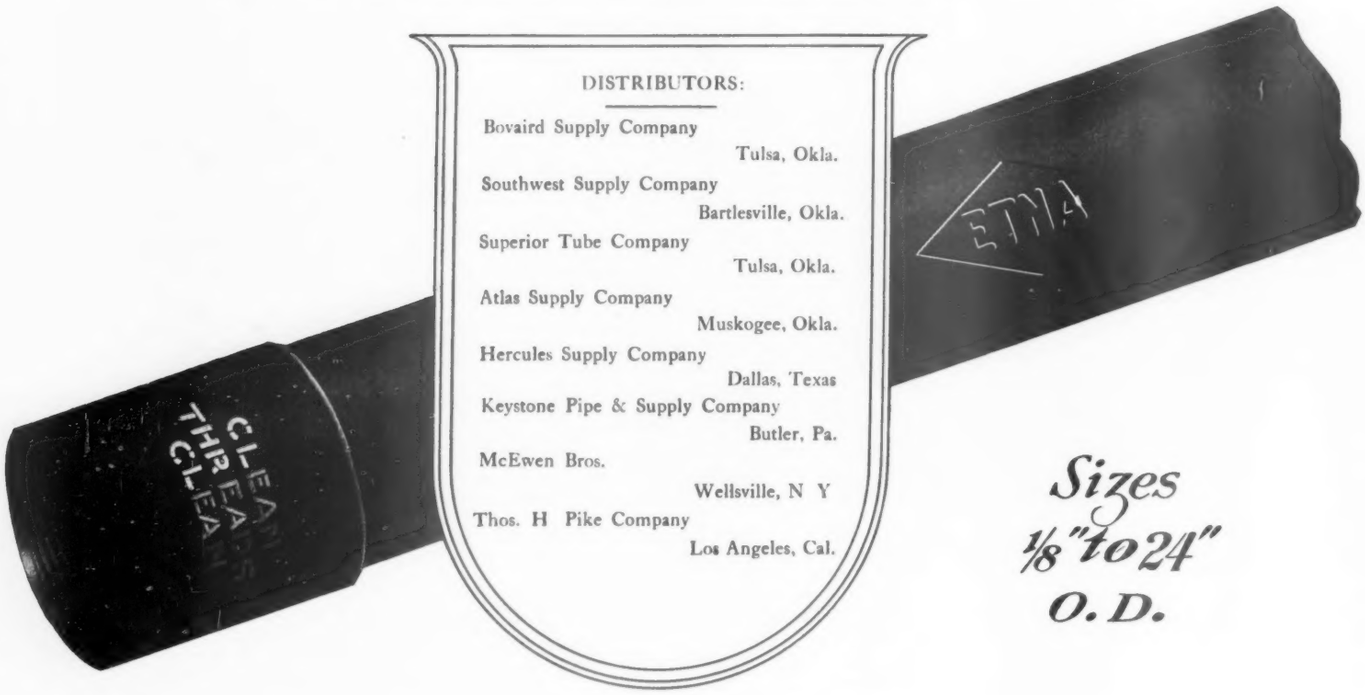


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# Southeastern Ohio Completions Best

## Deep Sand Producers Lead Week's Results in Eastern Fields. Braxton County, W. Va., Has 12,000,000 Gas Well

By D. S. Wakenight
*Staff Correspondent, Eastern Fields*

PITTSBURGH, Pa., Sept. 27.—Development work in the eastern fields moved at a slow pace during the past week. Only a few completions were reported and the best located in the deep sand territory in southeastern Ohio. The most of the work under way and starting at this time is in the shallow sand districts and the wells completed generally light.

**Best Completions of Week**

Only a few better than average wells were completed during the week. As usual, southeastern Ohio had the greater number, located in deep territory. In Section 10, Hopewell Township, Licking County, the Pure Oil Co. completed No. 3 on the A. O. Michael farm. It produced 110 bbls. the first 24 hours after shot in the Clinton sand.

In the southeast quarter of section, Green Township, Hocking County, the Griffin Producing Co. got a producer that placed 105 bbls. to its credit the first 24 hours after shot in the same formation, on the Marlow Oil & Gas Co.'s lease. In the northeast corner of Section 14, the Gordon Oil Co.'s No. 3 on the James Noble farm produced 55 bbls. the first 24 hours.

West Virginia completed but one fair producer and a very good gasser. The good producer is the Ohio Fuel Oil Co.'s test on the James Reed farm, in Henry district, Clay County. It is good for 50 bbls. a day. Operations in this development are slowing down. Braxton County, furnished the good gasser. It is located in Otter district, and J. H. Haines the owner. This well is a test on the C. L. Engle farm and has an estimated capacity of 12,000,000 feet a day. No other gas well ever completed in Braxton County equalled it in size.

The southwest Pennsylvania Fields completed nothing better than very light pumpers, one in Greene and the other in Allegheny County. The only section that promises anything better is Morris Township, Greene County, on the Rutan farms and in the immediate vicinity. The discovery of a new pool seems almost hopeless.

**Week-End Completions**

At the close of the week of development work the southeastern Ohio fields completed nothing better than light pumpers. The end of the month will probably show fewer wells completed and less new production than for the month preceding.

In Lot 288, Sutton Township, Meigs County, the Penn Berea Co. completed a second test on the Hannah M. Capehart farm not good for more than 3 bbls. a day in the Berea grit. In the southwest quarter of Section 23, Sallisbury Township, Meigs County, the Coal Hollow Oil & Gas Co. has completed in the Berea grit a test on the R. T. and R. H. Burdette farm. It is a very light pumper.

**Deep Sand Duster**

In Lot 39, Perry Township, Holmes County, the Empire Gas & Fuel Co. drilled a test on the Mary A. Findley farm through the Clinton sand and found no oil or gas. It will go into the discard. In Jefferson Township, Noble County, L. A. Patton's No. 7 on the George Warren farm is a very light pumper in the Berea grit. In Section 19, Enoch Township, A. S. Bucken and others have a very light pumper at a test on the Francis Shafer farm.

**West Virginia**

In Henry district, Clay County, the South Penn Oil Co. completed No. 10 on the Joseph Belcher farm good for 15 bbls. a day in the Big Injun sand. In Center district, Gilmer County, the Chartiers Oil Co. completed in the Big Injun sand a second test on the Mollie Stump farm. It is a gasser. In the same district, Britton Brothers' test on the Norris heirs' farm is a gasser in the same formation.

**Mingo County**

On Breeden Creek, Harvey district, Mingo County, the Old Colony Oil Co. has completed No. 18 on the Logan Cannel Coal Co.'s property. It is good for 25 bbls a day in the Maxon sand. No. 17 on the same tract has been completed in the same formation and is a duster. On Whites Creek, Union district, Wayne County, 900 feet east of the test on the Julia Barton farm, the Chartiers Oil Co. has started to drill a second test.

In Sheridan district, Calhoun County, W. H. Bickel's test on the James N. Wolverton farm is a gasser in the Maxon sand. In Smithfield district, Roane County, the United Fuel Gas Co.'s test on the J. B. Vineyard farm is a gasser in the Big Injun sand.

On the waters of the Kanawha River, Sheridan District, Calhoun County, Godfrey L. Cabot has completed No. 6 on the B. B. Ferrell farm. It is a gasser in the Berea grit good for 500,000 feet. On Big Root Creek, same district, W. H. Bickel drilled a second test on the James Wolverton farm through the same formation and good for 600,000 feet.

**Clay County**

In Henry district, Clay County, the South Penn Oil Co. completed No. 9 on the Joseph Belcher farm good for 10 bbls. a day. Recent completions in this district are much smaller than the average size of the first well.

In Union district, Pleasants County, the Tyler Oil Co.'s test on the James Nothcroft farm is through the Big Injun sand and dry. On the Monongahela River, Clinton district, Monongalia County, the Pittsburgh & West Virginia Gas Co. has drilled its test on the Roscoe Eakin farm to a total depth of 2,900 feet. It is dry in all sands.

**Pleasants County**

In Washington district, Pleasants County, the New York Petroleum Co. has completed a test on the Catherine Inghram farm, good for 5 bbls. a day in the Big Injun sand. In the same district, the Big Bend Oil Co.'s No. 3 on the Susan Colvin farm is dry and abandoned. In Freeman's Creek district, Lewis County, the Pittsburgh & West Virginia Gas Co. has a duster in the Gantz sand at a test on the Lillie Brannon farm. It has been abandoned.

Drilling down old wells in a number of counties is still a feature. In Lee district, Calhoun County, McIntosh & Scott have drilled down old No. 1 on the S. P. Hickman farm. It is a gasser in the Big Injun sand. In Freeman's Creek district, Lewis County, William Raferty & Co. have drilled down and through the Speechley sand No. 1 on the J. H. Livingston farm. It is a gasser.

**Good Gasser in Braxton County**

In Otter district, Braxton County one of the best gas wells ever drilled in that county has just been completed. It is J. H. Gaines' test on the C. L. Engle farm and estimated to be good for 12,000,000 feet a day. In Sheridan district, Calhoun County, G. L. Cabot's No. 6 on the B. B. Ferrell farm is a gasser in the Big Injun sand.

In Fairmont district, Marion County, the Owens Bottle & Machine Co. has a gasser in the gas sand at a test on the Charles Brock farm. In Union district, Harrison County, J. W. Johnson has a fifth sand gasser at a test on the Otto Westfall farm. In New Milton district, Doddridge County, G. B. Travis is fishing at a test on the W. F. Kidner farm. In McClelland district, Trainer & Travis are building a rig on the William Noble farm.

In Henry district, Clay County, the Virginian Gasoline & Oil Co. has completed in the same formation No. 16 on the Brown, Swan, Goshorn and Sennett lease good for 10 bbls. a day.

**Kanawha County**

On Buff Lick Run, Big Sandy district, Kanawha County, the United Fuel Gas Co. completed in the Big Injun sand No. 4 on the Mary Bird farm. It is a gasser good for 300,000 feet. On Middle Creek, West Union district, Doddridge County, the Murphy Oil Co. has a gasser in the Big Injun sand at a test on the O. Coleman farm. At the head waters of Dog Comfort Run, Grant district, Ritchie County, the Snyder Brothers Oil Co. has completed in the Big Injun sand a test on the A. C. Payne farm. It is good for 5 or 6 bbls. a day.

In the Big Run Pool, Williams district, Wood County, Athey & Grant have completed in the Cow Run sand No. 5 on the Henry farm and producing 5 bbls. a day. In Walker district, on White Oak Creek, the Power Oil Co. has drilled down to the Berea grit old No. 98 on the Volcanic tract and dry in the Berea grit. The same company is drilling No. 111 on the same tract. In Clay district, the Big Sand Oil Co. is drilling a second test on the S. L. Anderson farm.

**Duster in Tyler County**

In Union district, Tyler County, Albert Neely has drilled a test on the W. J. Rice farm through the Big Injun sand and dry. In Smithfield district, Roane County, the United Fuel Gas Co. has the rig completed for a test on the Asbury Lewis farm, on Rush Run.

Pleasants County is now completing an occasional fair producer. In Grant district, the Faith Oil & Gas Co. has drilled No. 4 on the Hammett heirs' farm through the Big Injun sand showing for a 40 bbl. producer. On the waters of Charley Creek, Grant district, Cabell County, 2½ miles southeast of Beckett Station, the Aetna Oil & Gas Co. has drilled a second test on the A. C. Chaney farm through the Big Injun sand good for 8 bbls. a day. In the same district, the Harshbarger Oil & Gas Co. has started to drill No. 10 on the E. W. Beckett farm.

**Harrison and Lewis County**

In Union district, Harrison County, the Hope Construction & Refining Co. has drilled No. 2 on the J. W. Morrison farm to the Speechley sand. It is a light gasser in the lower formation. In Freeman's Creek district, Lewis County, the Pittsburgh & West Virginia Gas Co.'s test on the C. D. Brannon farm is dry in all sands.

In Walton district, Roane County, the United Fuel Gas Co.'s test on the W. D. Steele farm is a gasser in the Big Injun sand. In Geary district, the same company's test on the Mary Taylor farm is a gasser in the same formation. The same company had the same luck at a test on the M. F. Osborne farm.

**Gasser in Marion County**

On Finches Run, Paw Paw district, Marion County, the Hope Natural Gas Co. has completed in the Big Injun sand

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# FARMINGTON FIELD MORE CONFIDENT OF REAL COMMERCIAL PRODUCTION

By Special Correspondent

FARMINGTON, N. Mex., Sept. 25.—Operations in this field are assuming a more confident air, and it is now generally believed that commercial production off the Navajo reservation of real consequence will soon be an established fact. The Hall well on the Red Mesa structure, which is already completed but the capacity test of which has not yet been made public, and the Congress well in the Kutz Canon district, which is nearing completion, are looked upon as being most likely to demonstrate this fact at an early date, while the Ross-Bloomfield and Miley wells are expected to give further proof a little later.

The Southwest Development Co., drilling on No. 1 Atteberry, Section 24-31-11, about 6 miles north of Aztec, at the last report was drilling at a depth of 1,180 feet, with 1,000 feet of water in the hole and a little gas showing coming through the water. The driller, C. S. Ringle, has a contract to go to 1,200 feet, but the management states it is the intention to go down to the Picture Cliff sands.

J. F. Wolking is rigging up on Section 9-30-11, on the old Aztec fair grounds, and announces his intention to put down a well to the shallow sands at least.

Word was received here last week that the New Mexahoma company had been reorganized and financed at El Reno, Okla., and that it was the intention of the new organization to complete both the Williams and Chrisman wells, Section 9 30-31, to the Picture Cliff sands. It will be remembered the Williams well showed a small production of oil when it was drilled, and the Chrisman well struck salt water and was plugged.

**Bloomfield District**

The Ross-Bloomfield Royalty Co., operating in the Bloomfield district, has completed the running of 4-inch casing and has mudded in and is pulling the outer string of casing. It is expected it will resume drilling the latter part of this week or first of next. The company believes it is close to production, but with the small string of tools and the depth of the hole, 2,340 feet, the progress will necessarily be slow.

R. M. Smith, operating in the Bloomfield district, Section 22-29-11, has located a well just one location east of Bloomfield Oil & Gas Co.'s No. 6. The fact that the production of high-grade oil in Smith's well No. 3 Bishop has held up so far without diminution has had the effect of stimulating activity in that field.

Graham & Boarts, in the Bloomfield district, Section 22-29-11, have located an offset well to No. 3 Bishop on a 10-acre tract due west of the Bishop tract.

The Union Oil & Mining Co., operating in the Blanco district, Section 8-29-9, is awaiting the arrival of a new cable with which to finish a fishing job at a depth of 2,940 feet. It is not believed the fishing job will be difficult, as the tools were lost by the cable breaking when the tools were coming up.

The Congress Oil Co., operating in the Kutz Canon district on Garland permit No. 1, Section 34-29-11, is getting the casing on the ground and will use it as

(Continued on Page 102)

# Throws Light on Southern Arkansas

## Oil Bearing Formations From the Red River to the Oklahoma Line Are Described. An Aid to Wildcatters

The Department of the Interior, through the Geological Survey, with the advice and co-operation of George C. Branner, State geologist of Arkansas, has just completed a geologic investigation yielding results that will be of practical interest to all geologists engaged in the search for oil and gas fields in southern Arkansas and northern Louisiana. In these regions the finding of hidden structure favorable to the occurrence of oil and gas has been hampered by the scarcity of information as to the variations in thickness and character of the buried Cretaceous formations, and uncertainties arising from this cause have added greatly to the aggregate cost of wildcat exploration. This article presents a condensed description of the Cretaceous formations which reach the surface in southwestern Arkansas, north of Red River and east of the Oklahoma line. It thus affords a guide to the interpretation of the logs of exploratory wells drilled in areas in southern Arkansas and northern Louisiana where these formations are under cover, and hence where they may contain oil and gas in commercial quantities if local structural conditions are favorable.

The field work on which this article is based consisted of a study of the Upper Cretaceous outcrops in southwestern Arkansas, supplementing work previously done by H. D. Miser. The investigation was carried out by C. H. Dane, with the advice and under the general guidance of L. W. Stephenson and with the assistance of P. D. Torrey.

### Sedimentary Rocks

The Cretaceous formations of southwestern Arkansas consist largely of unconsolidated sand, clay, and marl, with a few beds of limestone, sandstone, and chalk. These formations rest on the planed-off edges of intensely folded and faulted Paleozoic rocks, such as crop out in the Ouachita Mountains, to the north. Both the Paleozoic floor and the Cretaceous beds dip south and southeast at low angles, and the Cretaceous formations exposed are thus successively younger coastward, dipping beneath the overlying Eocene beds along a line extending roughly through Fulton, Prescott and Gurdon, Ark.

The Cretaceous formations of Arkansas and Texas have long been divided into a lower and an upper series of beds, known respectively as the Comanche and Gulf series, which are separated by a pronounced stratigraphic and faunal break. The formations belonging to these series now recognized in Arkansas and their stratigraphic relations are shown in the accompanying chart and are briefly described below in order, beginning with the oldest.

### Comanche Series

Trinity Formation.—The Trinity formation, described in detail by H. D. Miser in Geological Survey Bulletin 690, contains beds of gravel, sand, limestone, gypsum, and red or variegated clay.

Fredericksburg Group.—The Goodland limestone is the only representative of the Fredericksburg group in southwestern Arkansas, where it crops out only north of Cerro Gordo, near the Arkansas-Oklahoma State line, and thence for 1½ miles eastward along the "breaks" of Little River. In these exposures the Goodland consists chiefly of hard gray sandy and irregularly thick-bedded limestone, some of which is in lenticles a few feet long and about a foot thick that usually lie at small angles with the normal bedding. Some of the beds consist of hard yellowish-gray calcareous sandstone. The upper 35 feet of the Goodland is exposed near Cerro Gordo, and its total local thickness is believed to be about 50 feet.

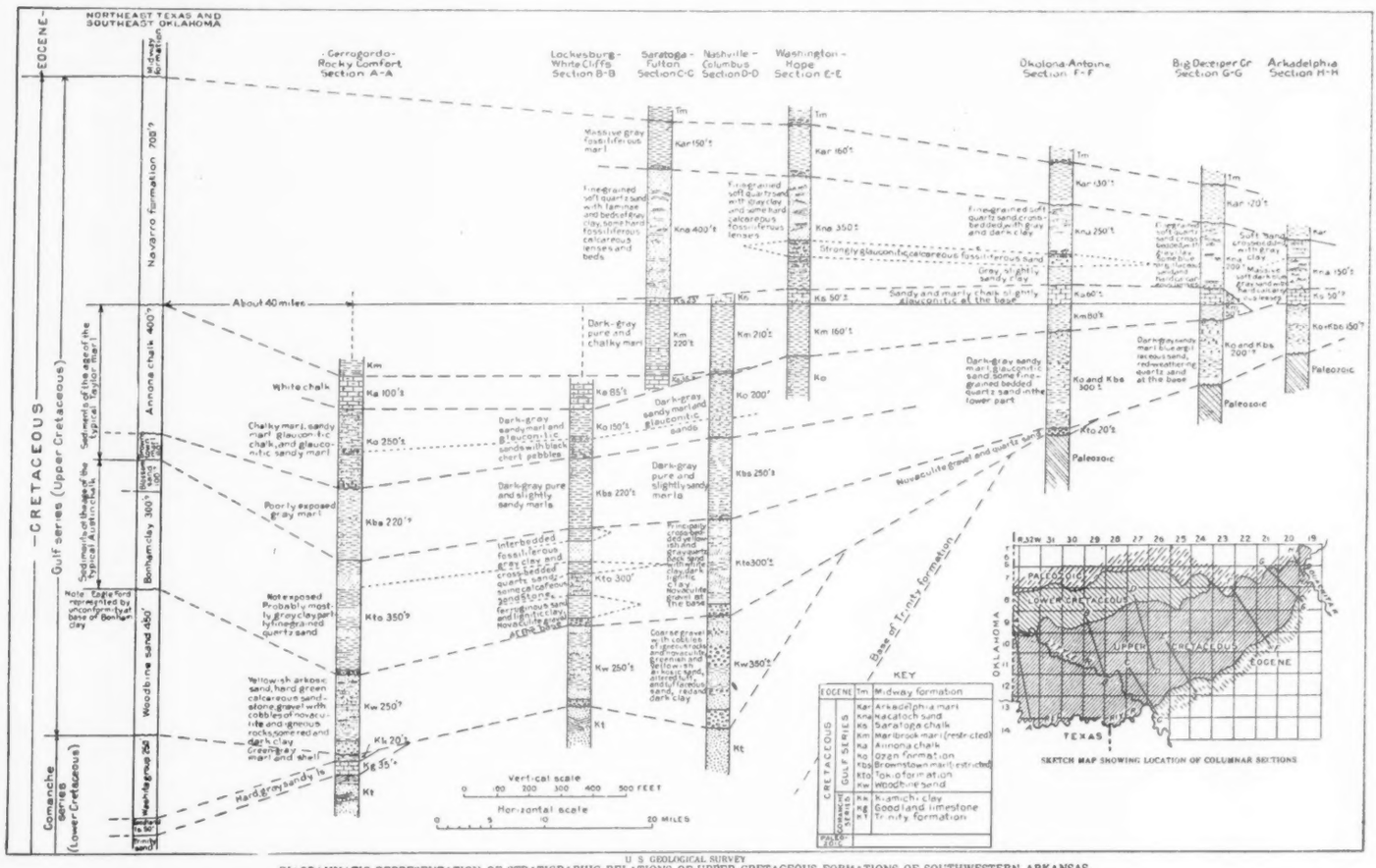
Washita Group.—The Washita group is represented in southwestern Arkansas by about 20 feet of gray marl and hard fossiliferous beds belonging to the Kiamichi clay which outcrop above the Goodland limestone near Cerro Gordo. Fossils densely packed in hard layers a foot thick have been identified by T. W. Stanton as the characteristic Kiamichi from Gryphea navia Hall.

### Gulf Series

Woodbine Sand.—The Woodbine sand in southwestern Arkansas consists chiefly of sand and gravel, much of which is water-laid volcanic material, with which are minor amounts of red and dark-gray clay. These beds are separated from the underlying Comanche series by a marked unconformity, in consequence of which they rest upon the Kiamichi clay along the Arkansas-Oklahoma line, whereas farther east, across Little River, as shown by Miser, they rest upon successively lower members of the Trinity formation. The sand and gravel of the Woodbine of Arkansas have already been partly described by Miser and C. S. Ross, and in a report now in preparation by Ross, Miser, and Stephenson they will be described petrographically in detail, and the basis for their correlation with the Woodbine sand of Texas will be given. The Woodbine includes the lower part of the "Bingen sand" as defined by A. C. Veatch in Geological Survey Professional Paper 46.

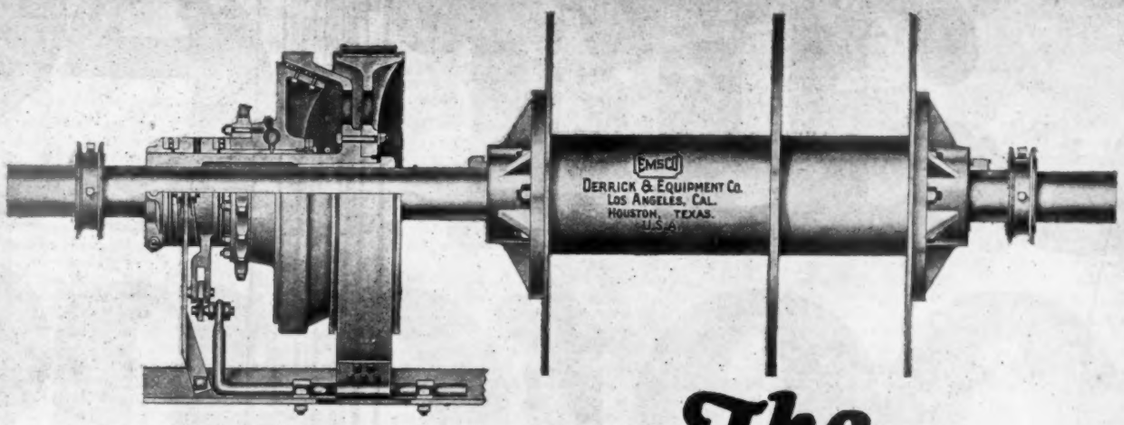
The Woodbine typically consists of soft olive-yellow cross-bedded sand, in which grains of quartz, decomposed green volcanic rocks, glassy or kaolinized feldspar, and biotite are embedded in a matrix of bentonitic clay. There are several layers of cross-bedded gravel with large well-rounded cobbles of novaculite and of igneous rocks. In some beds these igneous cobbles are fresh; in others they are completely altered to soft clay. The base of the Woodbine is marked by a particularly striking but discontinuous gravel bed which rests on a very irregular erosion surface. The cobbles in this gravel consist dominantly of novaculite, but there are some of quartzite and chert and a variable number of pebbles of soft decomposed igneous rock. The pebbles range from a fraction of an inch to 4 inches in diameter and average about 2 inches. This gravel and other gravels in the formation uniformly have the yellowish mealy clay matrix that is even more prominent in the sandy beds. Above the basal gravel and alternating with the soft, mealy yellowish sands are soft greenish sands in which most of the grains are composed of what was once igneous material, now altered to an apparently structureless green clay. The soft yellow and green sands contain concretionary lenses and beds of hard greenish calcareous sandstone in which quartz grains,

(Continued on Page 64)


NORTHEAST TEXAS AND SOUTHEAST OKLAHOMA
Gerrogordo-Rocky Comfort Section A-A
Lockesburg-White Cliffs Section B-B
Saratoga-Fulton Section C-C
Nashville-Columbus Section D-D
Washington-Hope Section E-E
Okolona-Antoine Section F-F
Big Deceiper Cr Section G-G
Arkadelphia Section H-H
EOCENE
CRETACEOUS
Gulf series (Upper Cretaceous)
Comanche series (Lower Cretaceous)
Navarro formation 700'?
Annona chalk 400'?
Sediments of the age of the typical Taylor marl
Sediments of the age of the typical Austin chalk
Bonham clay 300'
Woodbine sand 450'
Paluxy sand 250'
Washita group 250'
Fredericksburg 50'
Trinity sand
About 40 miles
White chalk
Chalky marl, sandy marl, glauconitic chalk, and glauconitic sandy marl
Poorly exposed gray marl
Yellowish arkosic sand, hard green calcareous sandstone, gravel with cobbles of novaculite and igneous rocks, some red and dark clay
Green gray marl and shell
Hard gray sandy lo
Massive gray fossiliferous marl
Fine-grained soft quartz sand with laminae and beds of clay, some hard fossiliferous calcareous lenses and beds
Dark-gray pure and chalky marl
Dark-gray sandy marl and glauconitic sands with black chert pebbles
Dark-gray pure and slightly sandy marls
Interbedded fossiliferous gray clay and cross-bedded quartz sands, some calcareous sandstone, ferruginous sandstone, and light-colored novaculite gravel
Coarse gravel with cobbles of novaculite and igneous rocks and gravel with yellow-brown arkosic sand, interbedded fossiliferous sand, and dark clay
Fine-grained soft quartz sand with clay lay and some hard calcareous fossiliferous lenses
Strongly glauconitic calcareous fossiliferous sand
Gray slightly sandy clay
Sandy and marly chalk slightly glauconitic at the base
Dark-gray sandy marl, glauconitic sand, some fine-grained bedded quartz sand in the lower part
Fine-grained soft quartz sand cross-bedded with gray and dark clay
Soft sandy kaolinized clay with gray clay
Dark-gray sandy marl, glauconitic sand, some fine-grained bedded quartz sand in the lower part
Novaculite gravel and quartz sand
Base of Trinity formation
Paleozoic
Vertical scale
Horizontal scale
KEY
EOCENE Tm Midway formation
CRETACEOUS Gulf series Kar Arkadelphia marl
Kna Nacatoch sand
Ks Saratoga chalk
Km Marlbrook marl (restricted)
Ka Annona chalk
Ko Ozan formation
Kto Tokio formation
Kw Woodbine sand
Comanche series Kk Kiamichi clay
Kg Goodland limestone
Kt Trinity formation
Paleozoic
PALEOZOIC
LOWER CRETACEOUS
UPPER CRETACEOUS
EOCENE
OKLAHOMA
TEXAS
SKETCH MAP SHOWING LOCATION OF COLUMNAR SECTIONS

U. S. GEOLOGICAL SURVEY

DIAGRAMMATIC REPRESENTATION OF STRATIGRAPHIC RELATIONS OF UPPER CRETACEOUS FORMATIONS OF SOUTHWESTERN ARKANSAS

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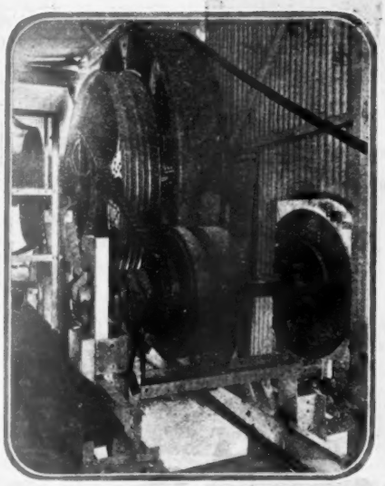

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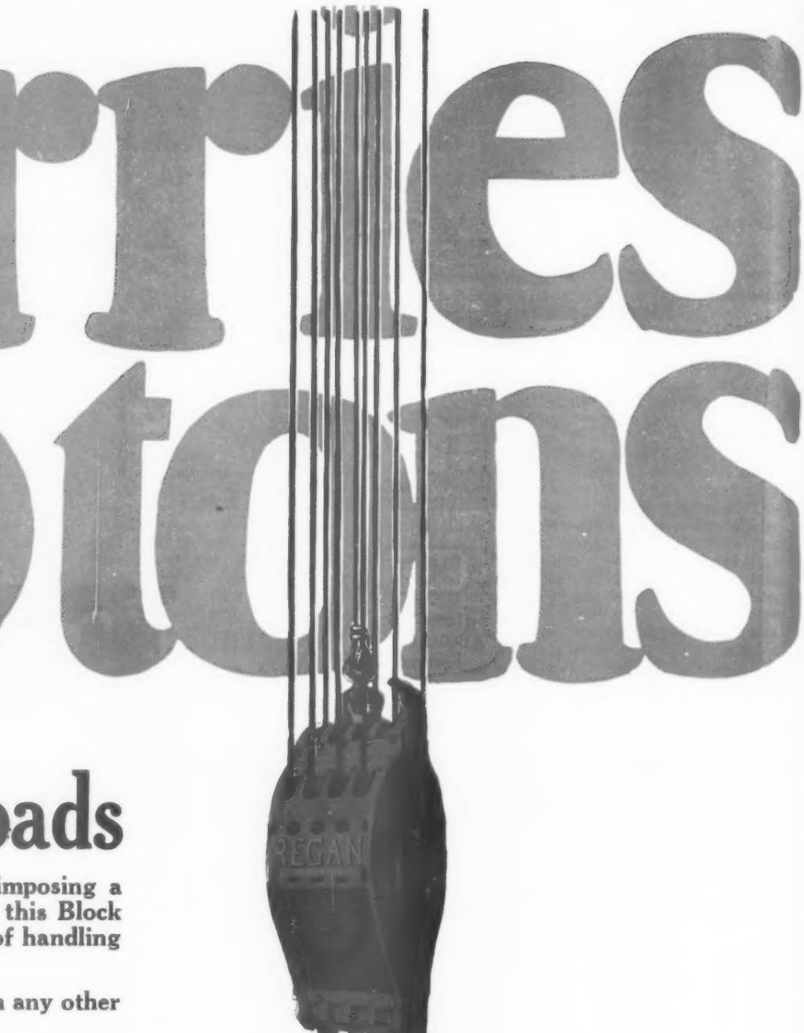


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**It will positively give at least 50% more service than any other make.**

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# Some Excellent Wells in Central West

## Deeper Producer in Trenton Sand. Four Good Completions in Wabash County, Illinois. Berne Pool Well, 75 Bbls.

By Whit
*Staff Correspondent, Central West Fields*

FINDLAY, Ohio, Sept. 27.—Several excellent oil and gas wells were struck during the week in the various sections of the Central West Field, regardless of the heavy rains that prevailed. In the Lima Field, of northwestern Ohio, No. 7 on the C. L. Sines farm, in Portage Township, Wood County, produced 35 bbls. initial from a depth of 220 feet in the Trenton sand. While the well is not large, it is of considerable prominence, as it shows that oil may be found in the deeper areas of the Trenton almost anywhere in the territory.

Wabash County, Illinois, makes a strong showing with four new completions, all above the century mark in production. No. 9 on the Kogan heirs farm is reported showing for close around 250 bbls.; No. 3 Breen farm, 125 bbls.; No. 2 Joseph Keiser farm, 125 bbls., and No. 1 Edward Armstrong farm, 120 bbls. natural production.

In the old Trenton rock area of eastern Indiana, the Berne Pool, in Jefferson Township, Adams County, takes the lead with a 75-bbl. initial producer on the William Boze farm, and a 60-bbl. well in No. 3 on the Smitley farm, same township.

The well of Murphy and others, which is No. 3 on the Mossholder lease in Perry Township, Coshocton County, is reported with a first 24 hours' production of 191 bbls. In Hardy Township, Holmes County, a second test on the John Hastings farm, is an initial producer of 152 bbls. Three gas wells were found in the Cleveland Field, of Dover Township, Cuyahoga County, all in the Central Ohio Field, that showed close to 2,000,000 feet each.

Sunshine and clear weather will eventually bring about a resumption of development work in all fields, and for that reason operators are depending upon October to be the most active month of the year, but all depends largely upon weather conditions.

### Lima Field

Conditions throughout the Lima Field of northwestern Ohio are showing a change, and from now on deeper drilling for lower pays in the Trenton sand will be the goal of the well owners, as they realize to get wells above the average the drill must penetrate this thick sand to its lower extremities to find better wells. Quite a large number of wells have been drilled from 100 to 500 feet in the Trenton, while the big production in the early days was found at from just below the cap rock to a depth of 100 feet in the sand and after that upper sands producing for close to 40 years developed nothing but small strippers. Some very good producers are still found in the upper portion of the sand, but they are in advance of the older defined lines of the field.

The Wayne Oil Co. has just drilled in its No. 7 well, 140 feet from the north line and 630 from the east line of the C. L. Lines farm, in the southwest quarter of Section 18, Portage Township, Wood County, with an initial production of 35 bbls. Top of Trenton was found at 1,280 feet and the pay at 220 feet in the sand, the total depth being 1,500 feet. Several miles south of Perrysburg, in Perrysburg Township, Wood County, the Oko Oil Co. of Lima, Ohio, has brought in No. 5 in the northwest corner of the William Budd farm, mapped as the H. Hoddlebring farm, in the northwest quarter of Section 28, and about 500 feet east of the same company's No. 5 on the Louisa DeVerna farm. Sand was topped at 1,242 feet and drilled 50 feet in the sand, the first 24 hours' production being reported at 25 bbls. This is outside of the old defined limits of the Lima Field proper, as the territory was considered out of lines in the early days.

Southwest of Findlay, in Liberty Township, Hancock County, Harpst Brothers' No. 3 well, 600 feet from the south line and 200 from the east line of the A. Schoonover farm, in the southeast quarter of Section 29, pumped 20 bbls. initial, with top of sand at 1,240 feet and total depth of hole 1,320 feet, or 80 feet in the sand. In Portage Township, the Ohio Oil Co.'s No. 6 well, 200 feet from the north line and 825 from the west line of the Monerva Overholt farm, in the southeast quarter of Section 22, struck top of sand at 1,323 feet, and at 250 feet in the sand the well pumped 16 bbls. initial, the total depth being 1,573 feet.

### Allen County

Northeast of Lima, in Bath Township, Allen County, O. T. Botkins and others' No. 5 well, 250 feet from the north line and 750 feet from the west line of the P. D. Driver farm, in the northeast quarter of Section 12, pumped 10 bbls. at a total depth of 1,357 feet, top of the sand being 1,315 feet, or 42 feet in the sand.

Near Lindsay, in Washington Township, Sandusky County, W. C. Richards and others' No. 5 well, 700 feet from the south line and 800 from the east line of the A. E. Waggoner farm, Section 11, pumped 7 bbls. Sand was found at 1,287 feet and drilled 46 feet in the sand. Near Helena, in Jackson Township, same county, Joseph A. Neiset and others' third well, 550 feet from the north line and 600 from the west line of the Frank J. Wammes farm, Section 17, pumped 2 bbls. at 27 feet in the sand, the top of sand being found at 1,270 feet.

In the southeast corner of the Charlotte Nolan farm, in the southwest quarter of Section 3, Center Township, Mercer County, Masters & Howard's No. 5 struck top of Trenton at 1,144 feet, and at 34 feet in the sand showed an initial of 12 bbls. In Liberty Township, the Celina Petroleum Co.'s test in the southeast corner of the C. Ballenbacher farm, Section 8, is credited with an initial of 2 bbls., with top of sand at 1,080 feet and oil at 40 feet in the sand. Same company's second test in the northwest corner of the M. A. Linn farm, in the southwest quarter of Section 9, pumped 10 bbls. initial. Sand was tapped at 1,077 feet and drilled 40 feet in the sand.

In Mississinewa Township, Darke County, the Illinois Oil Co.'s No. 15 well, 800 feet from north line and 650 from the east line of the Frank Siefring farm, in the northeast quarter of Section 11, pumped 6 bbls. Sand was found at 1,210 feet and drilled 40 feet in the sand.

The Ohio Oil Co.'s initial venture on the E. E. Neal farm, in Section 2, Catawba Township, Ottawa County, on Catawba Island, is reported in the sand and showing for a small well. It is located not far distant from where a very light well was recently finished by the Catawba Oil & Gas Co. on the Hesselbart-Smith farm. The oil in this field is found close to 2,000 feet below the surface, being approximately 20 miles east of the old field proper.

### Indiana

Just at this time the new extension to the Berne Field, in Adams County, is attracting more enthusiasm among operators than any other portion of the Hoosier State, owing to the good producers that are being found there. This is in territory that has been little thought of until of recent date and was overlooked in the rush in the early nineties, when gushers galore were found around Montpelier, Van Buren, Portland, Camden and other sections of the old field.

The new field is about 5 miles east of the town of Berne and now holds the center of attraction in the entire Trenton rock area of the State. Operations are growing by leaps and bounds. Two excellent wells were brought in during the week that will have a tendency for the starting of still more activity. Leases for miles around the new development have been taken, and indications are for quite an extensive territory to be added to the old field within a short time. George S. Lacknett, well-known Pittsburgh operator, drilled in his No. 1 on the William Boze 80 acres, Section 7, Jefferson Township, Adams County, the Trenton sand being topped at 1,067 feet and drilled 40 feet in the sand. The hole quickly filled up with 600 feet of fluid and was tubed and pumped 30 bbls. natural without lowering the fluid, after which the tubing was pulled and the well given a shot and cleaned out and tubing was run again, and within a few hours finished filling the 100-bbl. tank without lowering the fluid, and it has been estimated conservatively at 75 bbls. natural. This well is a direct offset to the good well recently drilled by Harmon & Watts on the William Smitley farm. Harmon & Watts have completed their No. 3 on the William Smitley farm, Section 6, same township, the sand being topped at 1,080 feet and drilled 57 feet in the sand and estimated as a 60-bbl. initial producer. No. 4, same farm, is being started, and George S. Lacknett is starting his second well on the William Boze farm, Section 7.

In the same township, Robert Maybeer is moving in for a test on the G. Gerber 40 acres, Section 6, and just north of the Smitley farm. J. W. O'Neil and others of Athens, Ohio, are starting a test on the John F. Teeter 37 acres, Section 7, Jefferson Township. McKelvey & Rendall are about due to bring in their second well on the William Bollenbacher 40 acres, Section 6. J. H. Harmon and others are also nearing the pay sand at No. 7 on the Mary Niblick farm, Section 5. Another well due for completion is that of Alvin C. Spindler of Pittsburgh in his No. 1 on the Doctor Wilson 38 acres, Section 7, offsetting the Smitley farm well. Roy Grimm of Fort Laramie, Ohio, is waiting the arrival of his drilling outfit to start a test on the George Zehr 80 acres, Section 5, same township.

### Berne Field Test

In Blue Creek Township, Adams County, a part of the Berne Field, John King and others of Columbus, Ohio, are making preparations to start a test on the J. O. Maloney 40 acres, Section 30. Schulte, Haney and others are drilling No. 2 on the Edward Lugabill farm, Section 21. No. 1 on this farm showed 20 bbls. initial production. Daugherty & Kelly of Washington Court House, Ohio, are due to complete a test on the B. Parr farm, Section 12, Wabash Township, same county. Homer Pontius is starting a well on the William Kerr farm, Section 7, Jefferson Township. Robert Maybeer and others have started a test well to the southwest of Berne on the John H. Hilty 101 acres. This test is near a

(Continued on Page 68)

# NORTH WEIR AND GLASGOW FIELDS HAVE MOST KENTUCKY COMPLETIONS

By Whit
*Staff Correspondent, Kentucky-Tennessee*

OWENSBORO, Ky., Sept. 25.—Only average producers were reported from any section of the Kentucky Field for the week, the bulk of the new wells coming from the North Weir Field in Lawrence and Johnson Counties in the eastern end of the state and in the Glasgow Field of Barren County. In the latter county, in the extension to the Hall Baker Field, the Consolidated Gas Co. is developing a remarkable lease in the H. W. Duff farm, and while big wells are not found, those drilled are far above the average producers in the county, and it is among the best property in the western division at this time. This company has brought in five new wells on the property, with an initial production totaling 105 bbls., an average of around 21 bbls. to the well and the fact that the oil is found at shallow depths and the wells maintain their output above expectations, makes a valuable production. This property is north of Glasgow.

A general survey of the State shows that production is keeping pretty well up to normal and has during the summer months. The Stoll Oil & Refining Co., of Louisville, has a pipeline in the Tinsley's Bottom Field of Clay County, Tennessee, and while the production of that one time productive area rapidly declined, there are other new developments being connected that will help along materially in maintaining the pipeline. The new 9-mile extension to the Paragon Development Co.'s line running from Cumberland County, Kentucky, into the recently discovered field near Celina, in Clay County, Tennessee, will be completed and will give a market for several thousand barrels of crude now stored in tanks on the leases. These two pipelines should bring about an active development over Clay County. One feature of the wells in that part of Tenessee is that they will pay for themselves within a short period as they usually run high in initial production.

There is a renewal of wildcatting in McCreary County, Kentucky, which joins Wayne County to the east and southeast. The operators are making an effort to extend the Beaver sand field of Wayne County into McCreary. This sand has been a wonder for more than 25 years and during the early days developed some big producers. For instance in 1903 the Sue Jones farm had a well that produced close around 600 bbls. initial and many wells above the century mark were recorded in those days.

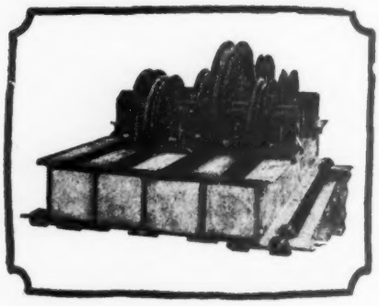
There is somewhat of a let-up in the western division, owing to the heavy rains during the past month, making it next to impossible to move material.

### Stoll Refining Runs

The Stoll Oil & Refining Co. of Louisville ran crude from Kentucky wells during August to the amount of 18,434.93 bbls. Of this amount 3,900.64 bbls. were handled from the Lee County Field in the eastern division and 14,534.29 bbls.

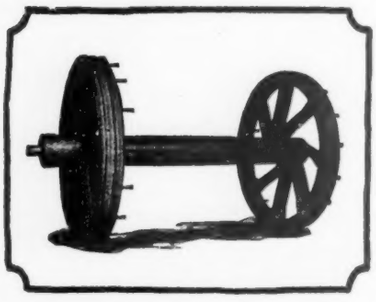
(Continued on Page 93)

# *The Dividing Line*



Well, Boy! What do you think of your 5000 barrel well? "She's a beaut, Gus. I'll hand it to you for speedy drilling and good luck."

"Good luck? Luck had nothing to do with it. Look the rig over—a complete 'IDECO' Steel Derrick with 'IDECO' Crown Blocks, Steel Wheels and Machinery Supports—add to this good pipe and tools. Luck has nothing to do with it."



"Look over at Williams' wreck—see what happens when a wooden rig tries to race an 'IDECO'! Williams is a fine fellow, but he hasn't learned you can't drill a 1926 hole with an 1896 model derrick."

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**(GALVANIZED)**

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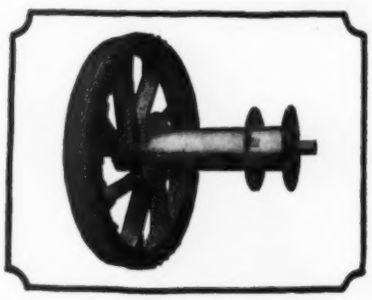
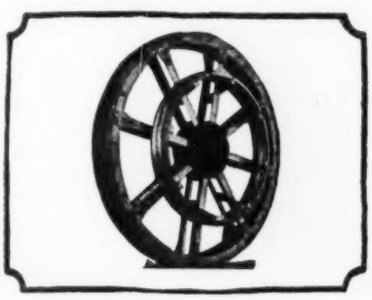
"Up to an hour ago, chief, I would of said wooden derricks was all right, but *after this* tough piece of luck I'm through. Gus Edwards beating me ten feet a day with that 'IDECO' steel outfit of his before we pulled her in. Now he's on production and draining the pool. I'm through with wood! Get me an 'IDECO' and I'll be down to sand in a week without countin' on good luck."





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*"No matter what thread is used it is only as good as the machine work."*

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# EQUIPMENT AND SUPPLIES

## LINE PIPE BUSINESS PROSPECTS; OIL TANK PLATE BOOKINGS LARGE

By B. E. V. Luty

PITTSBURGH, Pa., Sept. 27.—Delivery promises on the general run of oil country goods are still averaging four to six weeks, though on certain sizes earlier deliveries may be promised. It continues to be the experience that many of the older delivery promises have not been kept. Some mills have averaged lately about a week more than they promised, while others have probably been still more in arrears.

But little decrease is observed in the volume of buying of oil country goods, although the regular season is now drawing to a close. On account of the delay in shipment, orders and specifications placed now involve consumption very late in the year. With mills promising shipment in four to six weeks, and allowing for their being a little slow and for time on the railroad, seven weeks would be no more than a fair average estimate, and seven weeks from today is November 15.

**Kansas Pipeline**

Reports are that the Sinclair oil line in Kansas, 170 miles of 6-inch, 8-inch and 10-inch, is in the market, but there are suspicions in some quarters that the leading interest already has the order for the pipe. Prospects are that a good bit of line pipe business will be placed for production through the winter, giving the pipe mills a fair operation even if there is a sharp decline in demand for casing, etc., and merchant pipe. It is said that all line pipe business placed is at full prices, even for the largest lots, mills being in such strong position that they do not have any occasion to offer inducements to get tonnage.

In some sections demand for merchant pipe is said to have increased in the past few weeks, in connection with many buildings being brought close to completion in anticipation of winter. In general, the demand is much as it has been.

Prices are very firm all along the line.

August bookings of fabricated steel plate have just been reported, there being 20,108 net tons in oil storage tanks, the largest amount for any month in several years. The total in eight months through August is 93,833 net tons, against 55,801 net tons in the same period of last year and 65,122 net tons in the eight months of 1924.

The steel market in general has been showing no particular change this month from last, totals remaining about the same, with slight increases and decreases in various individual lines.

**Production Holds Up**

Steel production has been running approximately the same this month as last, following the rate of buying very closely, as all the buying is of hand to mouth character. Only in oil country tubular goods has there been such an accumulation of business as to make such interval between receipt of order and actual shipment. Many orders are executed with astonishing rapidity, by comparison with experiences of a few years and more ago.

Finished steel prices continue very steady, with no weakening or strengthening tendency, except that sheets have been gradually stiffening in the past few weeks, making up in small part for their large decline earlier in the year. The new basing systems on black and galvanized sheets are in general operation, with 24 instead of 28 gauge the quoting basis, prices being 3 and 3.85 cents respectively. Several mills have advanced their asking prices $2 a ton above these figures, being comfortably sold up.

There is little talk in the steel trade about the future. Business simply comes in from day to day, and there is no means of gauging the future. Generally speaking, there is a feeling that the demand of the past couple of years can hardly last indefinitely, without interruption, yet by long range comparisons the demand does not represent any large increase over that of 1919 and 1920, or even the demand just before the war.

Semifinished steel, pig iron and scrap are unchanged.

## TO ISSUE HANDBOOK ON STANDARDIZATION

The division of standardization of the American Petroleum Institute announced from its office in Dallas the forthcoming issuance of an A. P. I. handbook containing the various specifications for oil field equipment adopted to date, final or tentative. Carl A. Young, director of the division, said the handbook, on account of its size, will be convenient for use in the fields and will be made up in loose-leaf form. Dimensions of 4½ by 7 inches will allow it to fit in the pocket.

Among the specifications now ready for the handbook binder are those relating to belting, oil field boilers, cable drilling tool joints, derricks and standard rigs, pipe, rig iron, dimensional standards for line shafts for rotary drilling, wire rope, manila cordage, sucker rod and working barrel.

Adoption of an approved type of gauge and gauging practice for tubular material is one of the latest developments in the work of standardization, Mr. Young, the director, announced. "The National Tube Co.," he said, "has developed a type of gauge wherein the pipe is maintained as standard. In addition to adopting a definite type of gauge, a new gauging practice has also been adopted for casing, tubing and drill pipe."

At the standardization conference to be held in Tulsa December 6-8 the program will deal particularly with improvements in oil field drilling methods and equipment, with special reference to proper care and use of materials.

## NEW DEEP WELL PUMP TO BE MANUFACTURED

With the present tendency toward extraordinarily deep wells, and the steadily increasing cost of lifting the oil, the findings of John H. Suter, chief engineer for the Western Machinery Co. of Los Angeles, Calif., through the development of a deep well pump, will prove highly interesting to those who are actively engaged in this branch of oil country work. Patents covering the pump have recently been issued to Mr. Suter, who is considering plans for the manufacture and distribution of the appliance.

The pump itself is described as a very simple contrivance and consists of two units—the upper half, which is the oil pump, and the lower half, which is the driving motor. The motive power is transmitted to the pump by hydraulic means, and entirely eliminates the use of sucker rods for pumping purposes.

The motor is very similar to a single cylinder steam pump, except that this oil pump can be operated by any kind of fluid, gas, or oil, or a mixture of both gas and oil; while the pump proper is a simple assembly of the ball and seat type. The plunger of the motor is connected with the plunger of the pump unit by a piston rod which extends from one chamber to the other.

In operation this pump is screwed to the tubing string and submerged in the oil. At the predetermined depth the pump unit is packed on the lower end. The driving fluid is supplied to the annular space between the well casing and the tubing respectively, the pump unit, under pressure, by any suitable metho' The liquid passes downward and enters the motor cylinder through either of two parts provided for that purpose.

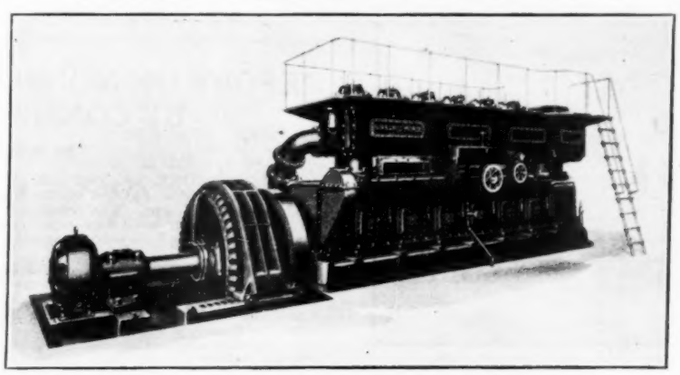
## DERRICK SUBJECTED TO UNUSUAL STRAINS

Recently at Electra, Tex., an "Ideco" derrick owned by the Magnolia Petroleum Co. was skidded 600 feet to a new location. It was necessary to cross a creek bed and go up an incline, which accounts for the derrick being at an angle in the picture. In crossing the creek, at one time, one of the derrick corners was 5 to 6 inches above any support, yet the skidding, it is reported, was accomplished without a particle of give or damage to

the derrick, and the manufacturers say the reserve strength of the "Ideco" structural steel derrick was particularly emphasized. It is a comparatively simple matter to design a structure to withstand vertical strains, but in this case there was a combination of vertical and lateral strains which threw practically all of the weight on two legs.

Prior to moving the derrick to the new location, this rig had been used to pull casings. The Magnolia Petroleum Co. had 1,018 feet of 10-inch heavy casing and a string of 12½-inch casing in the hole. Both strings were stuck and in pulling the 10-inch casing was broken in three places and the 12½-inch casing in one.

## ANNOUNCES LARGER DIESEL ENGINE SERVICE



Recent announcement by Fairbanks, Morse & Co. of a larger line of Diesel engines in ratings of 480, 600 and 720 horsepower has aroused interest among users of Diesel engines. This company has been a strong advocate of simplicity in Diesel engine design through the use of the 2-cycle, airless injection principle. It has also been its policy to build engines in the range of ratings where the demand would warrant large production facilities. With the rapidly growing use of Diesels in both the marine and stationary field there has come a greater demand for larger engines and the new ratings are the result. Some 12 of the 720-horsepower units have gone into service and the larger series will play an important part in increasing the output of a plant which has been building Diesel engines at the rate of 200,000 horsepower annually.

The larger Diesels are the 2-cycle, single acting, port scavenging, airless injection type. With these fundamental principles a number of interesting features have been incorporated such as two-stage combustion, pressure lubricating system throughout, reversible and centralized control and a built-in scavenging pump.

The larger Diesel is extremely compact and yet accessible; "it is built," the company says, "to stand the hardest service with a minimum of operating attention and it shows excellent fuel economy. It starts and runs so smoothly it is difficult to tell whether it is running or not. In short, it has the results of all the years of Fairbanks-Morse engine building experience built into it."

## CLOSES NEW CONTRACTS FOR PIPELINE PUMPS

The Prescott Co., Menominee, Mich., announces it has closed contracts with the Andian National Corp., Ltd., of Toronto, for eight additional 30,000-bbl. pipeline pumps to be shipped to Colombia, S. A. This makes a total of eighteen 30,000-bbl. units the Prescott Co. is supplying the Andian National Corp.

The Prescott Co. is also building eight 25,000-bbl. pumps for the Prairie Pipe Line Co.'s new line, and another 25,000-bbl. unit for the Humble Pipe Line Co.

# Natural Gas Developments

## IMPORTANCE OF CAREFUL READINGS OF OPEN FLOW GAS MEASUREMENT

By F. L. Kallam
*Research Engineer, Southwestern Engineering Corp., Los Angeles, Calif.*

In making a gas survey of a prospective field for natural gasoline extraction, it is necessary to measure the gas volume, as well as secure the gasoline content of the gas. Generally the volume measurement is made by allowing the individual wells to flow freely to the air for a time sufficient to secure pressure readings with either an "open flow" outfit or a pitot-tube.

Some oil companies use these same methods for estimating gas flow from individual wells located upon leases wherein only the total gas produced is measured by orifice meter. By means of these periodic measurements it is possible to check the oil-to-gas ratio for each well from time to time.

A third use for this means of testing is in acquiring an initial knowledge of the gas produced from a well when it is first placed on production. This information is especially valuable in cases where facilities are not at hand for handling the gas, and thus it affords a basis for pipeline sizes and other estimates.

Because of the fact that the results obtained by these open flow methods are used in more or less of a statistical way, and at some later date are referred to for a basis of estimating some new project involving perhaps considerable sums of money, it is necessary to exercise judgment in securing of the initial information or data. Considerable agitation has arisen at various times due to the inability of two operators, using the same testing method on a particular gas, to check. This fact should not be attributed to the test method, but rather to the condition of the well at the time of test. Especially is this so in the case of old wells where the flow is by "heads".

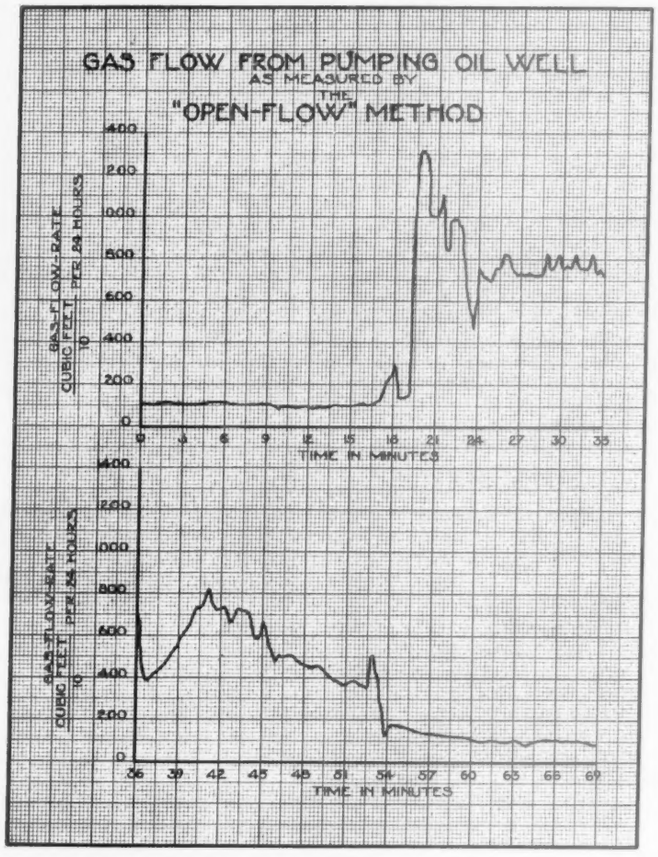
### Cyclonic Nature of Flow

Placing an orifice meter with a recording pressure gauge upon a well blowing to the air gives considerable information. Practically all gas flows from wells are of a cyclonic nature, that is, the flow rates vary over a period of time at the end of which approximately the same rates are reproduced and in much the same characteristic manner. These cycles, of course, vary with the individual wells, same having cycles as short as a quarter of an hour, while others may require six to eight hours before reproduction.

The accompanying chart shows the results obtained by the taking open flow measurements on a pumping well at intervals of one-half minute. This same information could have been more readily and easily obtained by using a portable orifice meter equipped with a recording gauge. The gauge should be fitted with a special driving mechanism such that the chart would make one revolution per minute.

The well in this particular case reproduced practically the same curve every hour, and hence only one complete cycle is shown in the diagram. Flow for this well was actually reported as 1,200 feet per day, possibly because the test was made during the first 15 minutes of a flow-cycle, and the operator made no check measurement at other times. Had the determination been made 30 minutes later, probably a flow in the neighborhood of 7,500 feet would have been reported. In either case, a considerable error is introduced as the average flow would be more nearly 4,300 feet per day.

The above is offered as a typical case of open flow measurement, and brings out the advisability of using care when making such measurements. Probably the best method is a portable orifice meter, as mentioned previously, which could be placed temporarily on the various wells for short periods of time. In cases where this would not be practical, it would seem advisable to repeat the measurement on each well several times during the day, the average the flows obtained. The practice of taking one instantaneous reading is obviously one leading to considerable error, and should be discontinued.


GAS FLOW FROM PUMPING OIL WELL
AS MEASURED BY THE
"OPEN-FLOW" METHOD
CUBIC FEET PER 24 HOURS
TIME IN MINUTES
CUBIC FEET PER 24 HOURS
TIME IN MINUTES

### UPHAM GAS IN VERNON

VERNON, Tex., Sept. 25 — Natural gas from the Shamrock fields was brought into Vernon through the mains of the Northern Texas Utilities Co. this week. It is brought to Vernon by a 2-inch line which taps the main line at Quanah. This line is to serve the immediate needs of the city until the main line is completed. The N. T. U. is an Upham subsidiary.

### GAS LINE TO SOUTH PLAINS

AMARILLO, Tex., Sept. 25.—Survey work on the gas line from the Carson County field to the South Plains, with Slaton as its terminus, is about completed. The survey is being pushed south of Palo Duro Canyon. W. W. Graves and associates of Oklahoma City, who are to build the pipeline will begin in October. The line will be 220 miles long, passing through Amarillo, Canyon, Plainview, Lubbock and intermediate points to Slaton. Fourteen-inch line will be laid to Amarillo, 7½ inch to Canyon, 10 inch to Lubbock and 8 inch to Slaton.

### CALIFORNIA GAS LINE TO COST $300,000

LOS ANGELES, Calif., Sept. 25.—The Midway Gas Co., has completed plans for construction of a high-pressure transmission line 35 miles long to convey gas from its main transmission line near Rose Station, at the foot of the Tejon Pass, to the Monolith Cement Co.'s plant, 4 miles east of Tehachapi. The cost will be in excess of $300,000.

The line is to consist of 33 miles of 8 inch pipe, and 2 miles of 6 inch pipe, comprising a continuous welded system through its entire length. Construction will begin immediately, and it is expected that work will be completed some time in October.

It is estimated the Monolith plant will consume 7,000,000 feet of gas each day, aggregating more than 2,500,000,000 feet annually, in the production of 4,000 bbls of cement each day.

### ALBERTA GAS RATES.

CHATHAM, Ont., Sept. 25.—In reply to the application of the Canadian Western Natural Gas Co., of Calgary for increased gas rates filed recently with the Alberta Public Utilities Commission, the city of Calgary has applied for a reduction in rates. The city asks net rates of 20 cents per 1,000 for domestic consumers, 18 cents for blocks and 15 cents for industrial users. This is for Turner Valley gas supplied to Calgary alone. For the entire system, supplying other communities as well as Calgary and drawing gas also from the Foremost and Bow Island fields, a rate of 25 cents for domestic users is proposed. Argument covering Calgary's case for lower rates has been filed with the commission. Objection is also taken to the proposed $1 minimum service charge. Premier Brownlee of Alberta is reported to be arranging a conference of all the parties interested to consider not merely the rate question but the utilization of waste gas from the Turner Valley Field; with a view to arriving at an amicable adjustment.

## REPORT ON MONROE, LA., GAS FIELD BY CONSERVATION COMMISSION

By James H. Dameron

SHREVEPORT, La., Sept. 25.—Copies of the Louisiana Conservation Commission's report on the condition of the Monroe Louisiana gas field are now available to producers in that area. The report shows the former and present rock pressure and former and present open flow capacity of the more than 400 producing wells in the field. The combined open flow capacity of the field is greater than 3,000,000,000 feet of gas daily.

Close to 300,000,000 feet of gas is being drawn from the great reservoir daily, the larger part of which is used in making carbon. The remainder goes to industrial and domestic consumption. From this gas the bulk of natural gasoline made in the Louisiana-Arkansas division of the Mid-Continent is extracted by plants scattered over the Monroe Field.

The following report shows a decrease in the rock pressure of a great number of the old wells:

| Well and Number— | Pressure, Pounds— Former | Present | Open Flow— Former | Present |
|---|---|---|---|---|
| Amalgamated Co.: | | | | |
| Farley 1 | 748 | 700 | 16,972,290 | 19,200,000 |
| Farley 2 | 715 | 705 | 10,218,716 | 10,739,376 |
| Perry 3 | 610 | 570 | 6,317,340 | 7,020,000 |
| Perry 5 | 605 | 555 | 3,264,182 | 1,181,040 |
| Southern 1 | 690 | 665 | 11,136,590 | 9,724,160 |
| St. Louis 1 | 662 | 630 | 11,942,513 | 12,078,080 |
| Brummitt & Julian: | | | | |
| Miller 1 | 810 | 800 | 886,037 | 750,000 |
| Carson Carbon Co.: | | | | |
| Erwin 1 | 425 | 340 | 3,456,507 | 2,918,350 |
| Erwin 2 | 460 | 355 | 1,051,232 | 2,768,691 |
| Wooley 1 | 405 | 315 | 3,720,780 | 2,857,735 |
| Consolidated Carbon Co.: | | | | |
| Cole 1 | 745 | 640 | 24,743,163 | 21,652,500 |
| Kerr 1 | 625 | 550 | 21,008,570 | 30,376,640 |
| Kerr 2 | 680 | 500 | 27,819,903 | 20,140,000 |
| Wilson 1 | 605 | 520 | 24,050,490 | 20,140,000 |
| Fee 1 | 235 | 235 | 1,358,584 | 1,358,584 |
| Consumers Gas Co.: | | | | |
| Richie 1 | 210 | 210 | 7,957,193 | 10,734,240 |
| Richie 2 | 213 | 212 | 2,999,121 | 2,957,130 |
| Richie 3 | 215 | 212 | 6,325,253 | 6,636,000 |
| Collins 1 | 425 | 363 | 5,880,299 | 3,872,800 |
| Collins 2 | 425 | 363 | 1,935,450 | 1,504,000 |
| Cronin & McKenzie: | | | | |
| Perry 1 | 716 | 685 | 8,733,559 | 8,580,120 |
| Chester Carbon Co.: | | | | |
| F. M. & McGee 1 | 310 | 310 | 204,589 | 204,589 |

(Continued on Page 86)

# BYERS PIPE

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*also look for name and year rolled in metal*

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In these places, (and they are found along practically all pipe line routes) corrosion is especially active. Here high maintenance and replacement expense will be inevitable unless pipe of more than ordinary rust resistance is used. Mere surface protection only partly meets the requirements of durability.

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The reputation of Byers Pipe rests on a sixty-year record of durability which in the Byers mills is being zealously guarded against cheapening processes which might be detrimental to quality of material.

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Okemah Taft Los Angeles

# MEN KNOWN IN OILDOM

**Amos Ball**

**Amos Ball, who succeeds T. J. Thompson as general manager of sales as well as a member of the board of directors, has been with the Standard Oil Company of Indiana 30 years, beginning work January 4, 1897, at Marshalltown, Iowa, as a clerk and general utility man. He fired boilers, filled tankwagons, did warehouse work, office work, and called on the trade. He took a business college course in the evenings.**

**Mr. Ball was transferred April 1, 1900, to Des Moines, Iowa, as clerk and stenographer to Milton Storer, then manager, and six years later he was made manager's assistant. On January 1, 1915, he was made assistant manager, and on June 1, 1921, made manager of the consolidated Dubuque and Des Moines divisions.**

**Mr. Ball was brought to Chicago as assistant general manager, January 1, 1922, and assigned the western division. Since that time he has had charge of the central and eastern divisions including the Chicago division.**

**After completing his high school course in 1894, he studied law and other subjects covered by a Liberal Arts College course.**

**Mr. Ball is 49 years old, was married in 1902, and has three sons now attending Northwestern University at Evanston, Ill.**

# PERSONAL PARAGRAPHS

Oscar J. Berend, in charge of the gas contract division of the Skelly Oil Company, has resigned, effective September 30.

* * *

J. E. Magner, of the Magner Supply Company of Sistersville, W. Va., is looking over the Saginaw, Mich., oil properties.

* * *

George B. Williams, sales manager of the Johnson Oil & Refining Company, Chicago, was a recent visitor in Shreveport, La.

* * *

John Emerson, in charge of marketing for the Prairie Oil & Gas Company at Tulsa, Okla., has returned from his vacation.

* * *

J. W. McCulloch, president of the McCulloch Oil Company, of Okmulgee, Okla., is making a trip through the Texas oil fields.

* * *

L. C. McEvoy, drilling contractor and oil producer of Okmulgee, Okla., has moved his residence from that city to Tulsa, Okla.

E. Tumaniez, of the O'Kansas Oil Company, has returned to Tulsa, Okla., after an inspection trip of the western Oklahoma fields.

* * *

Jess Vernon, in charge of the Amerada Petroleum Corporation's geological office at Okmulgee, Okla., is spending his vacation in Colorado.

* * *

Jack McKeon, one of California's successful independent operators, has just been appointed general manager of the Richfield Oil Company.

* * *

Waite Phillips, oil producer and part owner of the Philmack Oil Company, is in Tulsa, Okla., after a summer spent on his ranch in New Mexico.

* * *

George Coyle, general superintendent of the Prairie Pipe Line Company, is back at his desk in Tulsa, Okla., after a vacation spent in Minnesota.

* * *

J. W. McIntosh, well-known operator and contractor, of Payne, Paulding County, Ohio, is spending some time in the Saginaw Field of Michigan.

* * *

Charles Schwab, oil producer of Bradford, Pa., passed through Tulsa, Okla., en route to Amarillo, Tex., where he will look over the Texas Panhandle Field.

* * *

W. S. Hovis, sales engineer for the Gardner Governor Company of Quincy, Ill., is located in the Oklahoma fields at present, and makes headquarters at Tulsa.

* * *

F. Ray McGrew, president of the Standard Pipe Line Company, has returned to Shreveport, La., following a vacation of several weeks spent in the Rocky Mountain area.

* * *

B. G. Hewitt, general manager of the Kensaw Petroleum Corporation's Arkansas operations, has returned to his field duties following a brief trip to Indianapolis, Ind.

* * *

F. W. Burford, vice president and general manager of the Crystal Oil Refining Corporation, Shreveport, La., made a recent two-week business trip through the East.

* * *

J. J. Moroney, president of the North Baltimore Oil and Gas Association of Okmulgee, Okla., has returned from a summer vacation spent in California and Hawaii.

* * *

C. R. Thomas, who has been employed for seven years as geologist for the Amerada Petroleum Corporation, has resigned to open an office in the Clinton Building, Tulsa, Okla.

* * *

Ralph H. Cummins, formerly with the White Eagle Oil & Refining Company of Wichita, Kans., is now with the Marland interests and has headquarters at Fort Worth, Tex.

* * *

Vern Taylor of Indiana, Pa., a director of the Marland Oil Company, and principal owner of the Peerless Oil & Gas Company of Tulsa, Okla., was a visitor in the Mid-Continent Field last week.

* * *

W. R. Guiberson, of the Guiberson Corporation, has left Los Angeles, Calif., for a short sojourn in the Rocky Mountain region where business will be combined with pleasure for the next month or so.

* * *

John Bartram, of the geological department of the Midwest Refining Company, has returned from an inspection trip over the Montana fields and attended the meeting of the geologists at Denver, Colo. Colo.

* * *

J. C. Donnell, president, and Otto D. Donnell, vice president of the Ohio Oil Company, Findlay, Ohio, attended the funeral of Martin B. Daly, president of the East Ohio Gas Company at Cleveland, Ohio.

* * *

A. J. Smith, well-known refiner and technical engineer, of Kansas City, Mo., en route East to establish an eastern headquarters for his company in New York, stopped off a day at Toledo, Ohio, to shake hands with his many friends.

W. M. Price, well-known oil operator in Wabash County, Illinois, has returned to Allendale, that county, for a summer's vacation in the Pennsylvania Mountains. He was accompanied by Mrs. Price. They report a fine vacation.

* * *

E. DeGolyer, of New York, president of the Amerada Petroleum Corporation, is making an inspection trip of the Mid-Continent holdings of his company, and was in conference with John M. Lovejoy, vice president and western manager of the company.

* * *

A. E. Humphreys of Denver, Colo., president of the Humphreys Corporation, and discoverer of the pools at Mexia, Currie, Wortham and Nocona, recently toured Nigger Creek. He was honor guest at a barbecue attended by about 50 of the leading operators of the Mexia-Corsicana district.

* * *

C. L. Coppage, vice president of sales of the California Petroleum Corporation, has returned from a four months' trip to the Far East. Mr. Coppage traveled through Australia, New Zealand, Java, Sumatra, the Malay States, China and Japan, covering approximately 40,000 miles while he was away.

* * *

G. H. Collingwood, formerly of the Gypsy Oil Company land department, has resigned to go to Fort Worth, Tex., in the interests of Philmack Oil Company. A. M. Leverson, geologist of the same company, has also entered the employ of the Philmack concern.

* * *

Charles M. Block, who served the past summer as assistant to Mrs. Laura-Lee Weinzerl, paleontologist in Alexander Deussen's geological department of the Marland Oil Company, at Houston, Tex., departed for Columbia, Tenn., to enter Columbia Military Academy, from which he expects to graduate this season.

* * *

E. R. Kyler has been made general sales manager of the Biggs Boiler Works Company, manufacturers of general steel plate and tank construction, and located at Akron, Ohio. Mr. Kyler is well known in the oil industry through his previous connections which were with the Graver Corporation and the Leader Iron Works.

* * *

Sir Alfred Mond, M. P., chairman of the new British National Fuel and Power Committee, recently appointed by the Government, is to be the first president of the Institution of Fuel Economy Engineers. At its first meeting of the winter session on September 24, Dr. A. E. Dunstan, chief chemist of the Anglo-Persian Oil Company, read a paper on "Liquid Fuels."

* * *

James B. McCabe, general manager of the Municipal Gas Company of Dallas, Tex., is proud of his wife's ability as a disciple of Izaak Walton. Recently Mrs. McCabe landed a 48-pound fish off Cape Ann, Mass. It measured 4 feet in length. Mr. and Mrs. McCabe were spending their vacation on the ocean, with Robert B. Stearns, president of the Municipal Gas Company.

* * *

C. M. Ricketts, who has been engaged in marketing of petroleum products, has been given a position as a buyer for Spencer Petroleum Company of Chicago, and will represent that company at Wichita Falls, Tex. Until now the Spencer Petroleum Company has had no office in that city, its purchases there being made through an individual broker.

* * *

Charles R. Fettke and W. A. Copeland, of the Carnegie Institute of Technology, Pittsburgh, Pa., who have been making a detailed geological survey of the Bradford quadrangle for the Pennsylvania Topographic and Geological Survey, have returned to Pittsburgh. Field work will be continued next summer. That portion of the quadrangle included within the limits of the Bradford Oil Field is being mapped on a scale of 500 feet to the inch with structure contours on top of the Bradford sand at 5-foot intervals. The different methods of oil recovery at present employed and the results obtained are also being studied.

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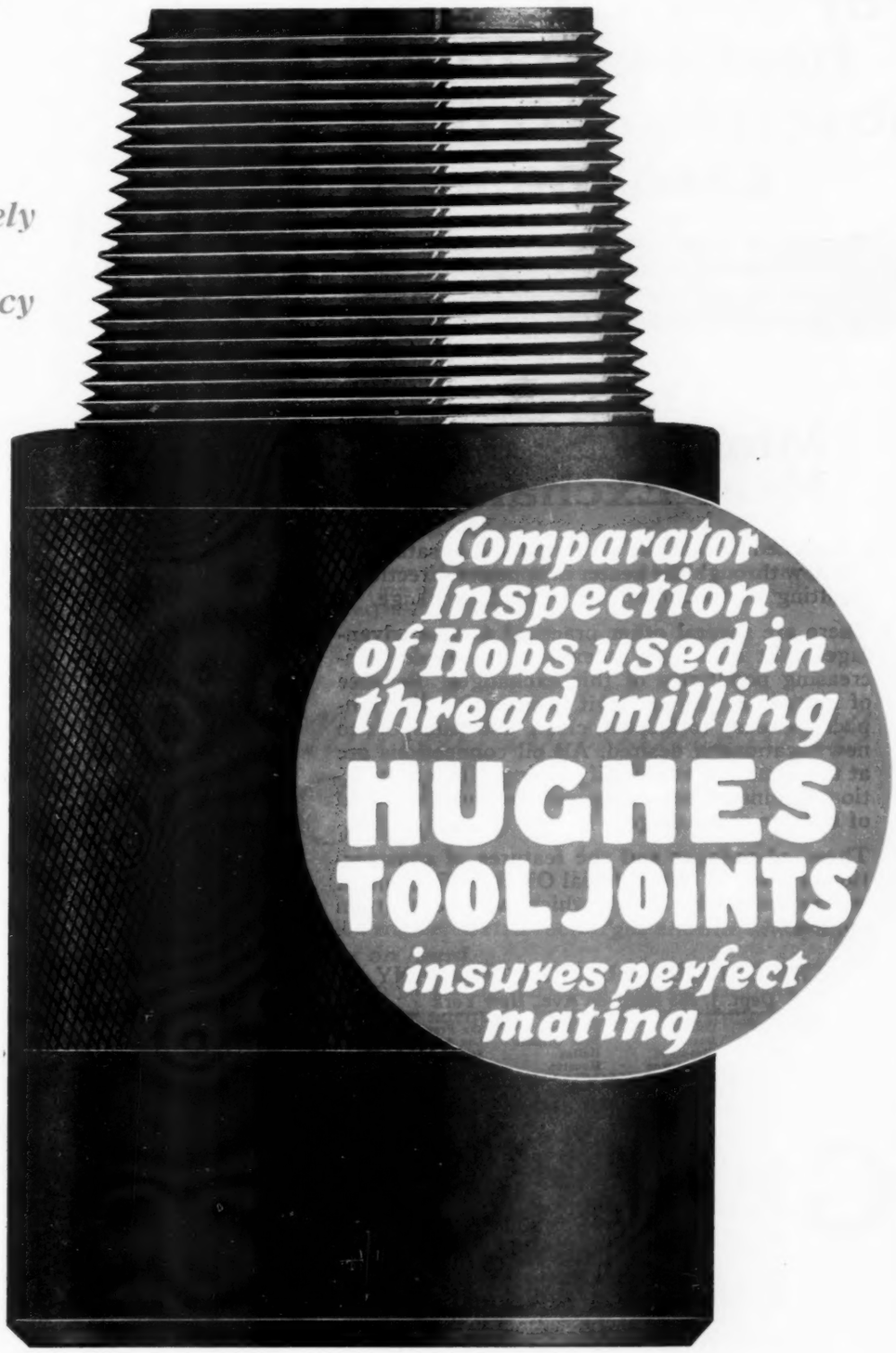


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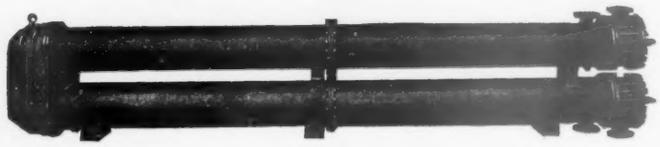

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## THROWS LIGHT ON SOUTHERN ARKANSAS

(Continued from Page 27)

clay grains, and novaculite pebbles are cemented by white crystalline calcite. The Woodbine also contains minor pockets and beds of massive red clay and of very dark gray plant-bearing clay.

Because of the superficial similarity of the sands of the Woodbine to those of the overlying Tokio formation, and because both the Woodbine and the Trinity contain red clay, it is frequently impossible to recognize the Woodbine in the ordinary driller's log, although its sands should be readily recognizable from drill cuttings because of their content of glassy feldspar (orthoclase), dark mica, and grains of altered volcanic rock.

The Woodbine sand is between 250 and 350 feet thick in southwestern Arkansas, but is absent east of Little Missouri River.

The contact of the Woodbine and the Trinity is well shown 1.6 miles north of Horatio, in Sevier County, on the road to DeQueen; also 0.6 mile east of Lockesburg along the road to Center Point and 2 miles south of Lockesburg on the road to Ben Lomond. Some typical outcrops occur at Morris Ferry, on Little River, in Section 15-10s-32w, 3 miles east of Horatio on the road to Dilworth, and at several places along the road from Lockesburg to Center Point.

### Tokio Formation

Tokio Formation.—The rocks herein designated Tokio formation unconformably overlie the Woodbine sand and correspond to the upper part of the "Bingen sand" as defined by Veatch. They include the Tokio sand member of the Bingen formation as defined by Miser in Geological Survey Bulletin 690 and the underlying heavy bed of gravel, which rests unconformably on the Woodbine sand. Along their outcrop they are composed principally of intertonguing beds of dark-gray lignitic, fossiliferous clay and cross-bedded gray quartz pack sand which weathers yellowish and reddish. East of Saline River the Tokio formation consists principally of quartz sand and novaculite gravel; west of the river it contains an increasing amount of clay. Much of the dark clay contains abundant shell prints, but some of it is only sparingly fossiliferous sand, glauconitic sand with pebbles and shark teeth, white clay, dark leaf-bearing clay, highly lignitic clay, carbonaceous sand, and coarse novaculite gravel. At the base of the Tokio as here redefined there is a conspicuous and persistent gravel bed.

Three prominent tongues of the fossil-print bearing clay extend eastward, in addition to minor lenses and tongues of the clay whose relations have not yet been deciphered. These three major tongues are not sharply delimited and terminated but finger out eastward. One tongue is near the base of the formation, just above the basal gravel. Another, which extends farther east, is near the middle of the formation. The third is at the top and carries large lenses of very hard calcareous fine-grained gray sandstone with numerous fossils, and also sandy clay and some glauconitic sand. It is believed that the two lower tongues coalesce toward the west and that the lower half of the formation consequently there consists principally of clay.

On the basis of fossils found in the formation Stephenson correlates it with the typical Austin chalk of Texas. Toward the west both the upper part of the Tokio and the clay beds that form its lower part become less sandy, and where last well exposed in Arkansas they resemble, respectively, the Blossom sand and the clay that underlies the Blossom in northeastern Texas; so that apparently the Tokio is to be correlated with these two units.

Toward the east the Tokio truncates first the arkosic sands of Woodbine age and then successive members of the Trinity formation until finally it rests directly on the Paleozoic basement rocks.

The Tokio is about 300 feet thick from the vicinity of Nashville westward but thins eastward and is overlapped by the Brownstown marl.

Typical outcrops of the sandy phase of the Tokio occur just west of Doyle in Section 22-9s-26w., and 2.1 miles south of Nashville on the road to Washington. Typical outcrops of the fossiliferous clay are found 0.9 mile north of Ben Lomond on the road to Lockesburg and in the NW Section 10 and SE NW Section 22-10s-29w.

Brownstown Marl (restricted).—The Brownstown marl as here redefined and restricted corresponds to only the lower part of the beds included in the Brownstown by Veatch in Geological Survey Professional Paper 46, the upper part of the formation as defined by Veatch being here separated as the Ozan formation, for reasons given below.

The settlement of Brownstown, in Sevier County, stands on the uppermost part of the beds here referred to the Brownstown marl. Where typically exposed these beds consist of dark-gray calcareous clay or marl, which weathers very deeply and becomes light greenish gray and brownish gray. The unweathered marl may be nearly massive; the weathered marl usually shows distinct bedding. In many outcrops the marl contains a small percentage of very fine sand, but characteristically it is free from palpable sand. The contact between the Brownstown and the Tokio is a slightly irregular surface, and borings filled with sandy clay extend from the Brownstown down into the Tokio. Locally within a few feet of the base there are layers of hard, dense gray limestone that carry numerous poorly preserved fossils. Ammonites of Taylor age have been found in the lower part of the Brownstown, and the base of the formation evidently marks the base of the beds of Taylor age in Arkansas. The Brownstown marl completely overlaps the Tokio formation a few miles east of Antoine Creek.

### Marlbrook Marl

Marlbrook Marl (restricted). — The Marlbrook marl as here redefined is restricted to the beds beneath the Saratoga chalk rests uncomformably on the underlying marl and is therefore here treated as a distinct formation. The Marlbrook as here restricted is a strikingly uniform chalky marl, which is dark-blue when fresh and weathers deeply to a nearly white color. It is free from palpable sand and is therefore highly plastic when wet. The marl commonly occurs in thick beds but locally is massive and devoid of bedding. Toward the top it is fossiliferous and contains some coquina-like shell beds. The lower part of the Marlbrook contains some very chalky layers a few feet thick and is only sparingly fossiliferous. At the base the Marlbrook is transitional into the Annona chalk, in the upper part of which are shaly layers. Nevertheless the change from chalk to marl is usually rather abrupt. Where the Annona is absent and the Marlbrook rests directly on the Ozan formation there is a sharp contact and evidence of a break in sedimentation.

Some of the fossils found in the upper part of the Marlbrook marl as here restricted indicate a close faunal relationship with the Navarro of Texas, but nevertheless the Marlbrook is believed to represent a continuation of the Taylor phase of sedimentation which probably is not represented in outcrops in northeastern Texas.

The Marlbrook as here restricted is about 220 feet thick north of Saratoga, in Howard County, but gradually thins eastward to only 50 feet in eastern Clark County. It is typically exposed for a little over a mile north of Saratoga, on the road to Mineral Springs, in Howard County; along Marlbrook Creek, in Township 10s-24w.; and 0.5 mile north of Okolona, in Clark County.

Saratoga Chalk.—The Saratoga chalk, which rests unconformably on the Marlbrook marl, is a comparatively thin formation, ranging from 20 to 60 feet in thickness. It has previously been included in the Marlbrook marl, as a member, but in this paper it is treated as a separate formation because it is sepa-

(Continued on Page 98)

*Frechette's Service Station at Plattsburgh, N. Y., where a Foamite Extinguisher recently proved its ability to kill extra-hazardous fires at the start*

# "I would not be without one for $1000.00!"

ON June 6th we received the following letter from Mr. W. A. Frechette, whose fine filling and service station at Plattsburgh, N. Y., is shown above—

> "Please ship Parcel Post a charge for my 2½-gal. *Foamite* Extinguisher.
>
> "I would not be without one for $1,000 if I could not get another like it! A Tourist drove into my Filling Station, and his tank would not hold the amount of gas he wanted, consequently it overflowed. While I was waiting on another car this fellow drops a lighted match and up shoots the flame and in 3 minutes I had the fire out with my Extinguisher (or rather yours)."

Hundreds of filling stations and thousands of their patrons now recognize that the only sure way to kill oil or gasoline fires is to smother them under genuine Firefoam from *Foamite* equipment.

An average-size station can be safeguarded with the *Foamite* 2½-gallon Hand Extinguisher, pictured above, or the *Foamite* 5-gallon Extinguisher. Larger stations need also the *Foamite* 40-gallon engine. *Extra recharges should always be kept on hand.*

We supply a handsome metal sign or "emblem of safety" where adequate protection is installed. See the coupon.

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*Fire Protection Engineers and Manufacturers*

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Sales and Engineering Representatives in all leading cities

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1. Our business should have better protection against fire. Send free literature or representative.
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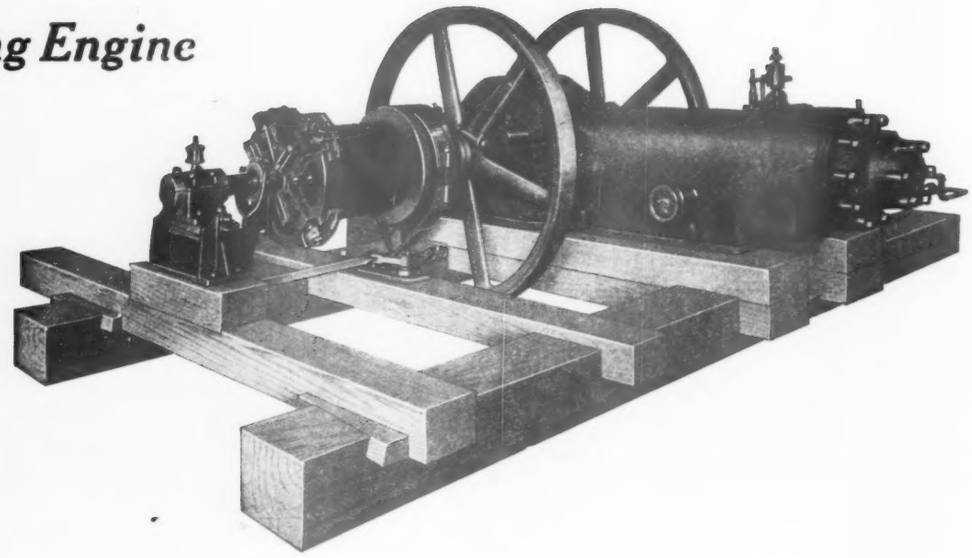
**A Complete Engineering Service**

***Against Fire***

# OIL

## Drilling Engine



# How Does Your Power Plant Stack Up With What These Drillers Say About the Franklin Valveless Oil Drilling Engine?

"In drilling with the Franklin Engine on this job there was not one minute's time lost on account of engine trouble. The engine started very easily, never requiring over two rocks of fly wheel, and ran several weeks straight away without stopping."

"For the year 1925, my lubricating oil for the four Franklin Gas Pumping Engines cost me $42.00, which is an average of $10.50 per engine. This seems unbelievable as these engines were pumping 24 hours per day."

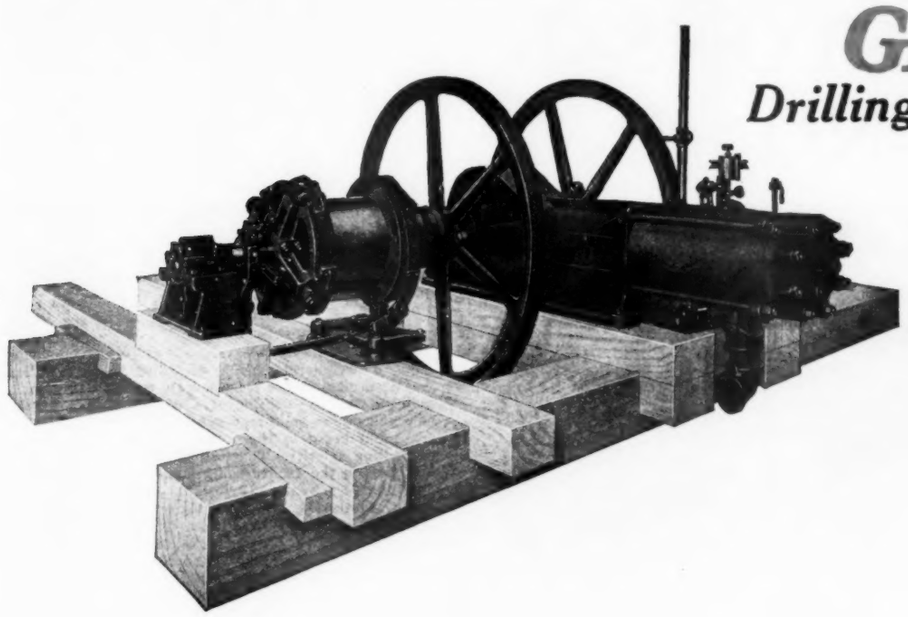
As a rule, oil men aren't much for handing out compliments, so when drillers "write home" about their power plants, you can bet your bottom dollar that they're getting no less than 100% satisfaction!

**Drop in on the nearest distributor and let him show you how simple a job it is to set up and operate the Franklin Valveless Drilling Engine.**

# FRANKLIN VALVE

**THEY BEAT STEAM**

# GAS
## *Drilling Engine*



# *If Natural or Casing Head Gas is Available Here is the Power Plant For You ~ Economical, Flexible, Powerful*

**Coal bills, bad water and expensive hauling don't worry the owner of a Franklin Valveless Gas Engine. His fuel is cheap, his power-plant dependable and his profits bigger. Steam isn't in it!**

**And when drilling is completed he can leave his engine on the pumping block or replace it with a smaller Franklin Valveless without changing a single bolt on the original foundation.**

### *Service*

**Even though Franklin Valveless Engines can be set up and operated successfully by an inexperienced crew, our distributors will furnish upon request, a factory mechanical expert to demonstrate and assist in the economic use of these power plants.**

**As for repairs—there are plenty of Franklin engines that have drilled from 10 to 18 wells without a cent's worth of repair or replacement!**

### *Prices*

**Complete with self-oiling reversible drilling clutch, circulating pump and fuel tank.**

**FOR MID-CONTINENT AND WESTERN DRILLING SERVICE**

**Oil, $3700 Gas, $1725 and $2150**

**FOR EASTERN DRILLING SERVICE**

**Oil, $2600 and $3350 Gas, $1450 and $1725**

**Pumping Engine Prices on Request**
**All prices f.o.b. factory.**

## FRANKLIN VALVELESS ENGINE COMPANY
**FRANKLIN, PENNA.**

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# LESS ENGINES
## AT EVERY TURN

# NO PISTONS—
# —NO RINGS
## *For Grit to Cut*

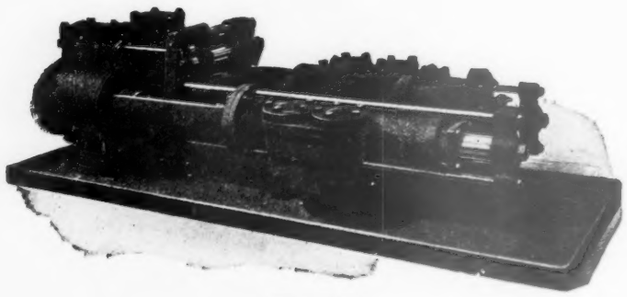


Fig. 117

*12x4½x12″ End Packed Plunger Pump for pressures up to 600 pounds. Capacity 115 barrels per hour.*

The plungers are held in position by packing, and therefore, do not wear the cylinders. Fluids containing grit can be handled best by this type of pump. Of course, the packing will wear, but it can be easily and cheaply renewed.

After years of service the plungers may wear also, but they can be trued up easily in a lathe; and the pump is ready for years of service again.

TRANSIT End Packed Plunger Pumps have long plunger stuffing boxes. This reduces wear of both packing and plungers.

*Bulletins on Request.*

**NATIONAL TRANSIT**
**PUMP & MACHINE CO.**
**OIL CITY, PA.**

DISTRICT OFFICES

New York Philadelphia Pittsburgh
Cleveland Houston Tulsa Denver


## CENTRAL WEST FIELDS

(Continued from Page 55)

well said to have shown very good when drilled a number of years ago.

Nearly every acre of land in Jefferson, Blue Creek and Wabash Townships, Adams County, is held under lease. One of the supply companies is contemplating the location of a store at Berne, as will also one of the torpedo companies. The Indiana Pipe Line Co. will lay a 3-inch line into the field, as its present line will not sufficiently handle the output. The wells in this field finish up at around 1,125 feet, the drilling is good and inexpensive, about 80 feet of 8-inch drive pipe usually required and 360 feet of casing. A large amount of rich sand is encountered, and the operations as a whole are very pleasant.

### Southwestern Indiana

Daviess County may yet get an oil boom. Latest developments, according to the Washington (Ind.) Democrat, would indicate that the drilling of a well to a new and deeper sand may bear profitable fruit and bring to the county a period of drilling activity. The well is the second test on the H. Ragsdale heirs farm, Section 21, Veale Township, several miles southwest of Washington, the county seat. The Veale sand, which is found productive in this area at from 970 to 1,000 feet, failed to show any oil at the depth in this well, hence it was practically given up, but Charles Parriott of Lawrenceville, Ill., an old-time contractor and operator, who is back of the drilling, told the workmen to reopen the hole and drill deeper. This was done and a new sand was encountered at close to 1,200 feet, a depth much greater than any of the other wells in the Washington district. This is a new sand to local drillers and is believed to be the Oakland City strata. On the afternoon scheduled for the drilling to halt for good, this new sand was touched, and drillers declare they barely penetrated it, possibly not going deeper than several inches. With the new sand merely scratched and so much oil rising in the hole, and it being plugged, oil men of Washington are beginning to believe the real oil depth has been located and that greater activity will begin in this locality and practically all wells will be drilled to a depth sufficient to locate the new sand touched on the Ragsdale farm, says the Democrat. At the present time laborers are working at the well to get it reamed out so a new string of casing can be set and drilling operations can be resumed. Oil men are beginning to get anxious to have the new sand in the Ragsdale lease drilled in to determine the real value of the new sand. Indications are that the well will be one of the best in the Washington Field. No chance estimates are being made as to the possible production of the well after it is drilled in, and nothing can be told until that is done, given a shot and put on the pump.

A couple of miles north of Washington, Washington Township, Daviess County, the Ohio Oil Co.'s test, 1,320 feet from the north line and 660 from the west line of the J. F. Graham farm, in the northeast quarter of Section 9, developed into a dry hole at a depth of 1,226 feet.

In Clay Township, Pike County, A. B. Bement's No. 5 well, 1,200 feet from the north line and 600 from the west line of the C. Waltz farm, in the southeast quarter of Lot 13, topped the sand at 997 feet and drilled 23 feet in the sand, where it was given a 60-quart shot, resulting in a 5-bbls. pumper at a total depth of 1,002 feet.

In Pigeon Township, Warrick County, the Turner Oil & Gas Co.'s test in the northeast corner of the Veck & Folson farm, in the northwest quarter of Section 7, developed into a dry hole at a depth of 1,250 feet.

### Illinois

Some wells near the gusher class were found in the Allendale Field of Wabash County during the past several days that adds a great deal to the average output of the field. The best of these is Mayhugh and others' No. 9 on the Kogan heirs farm, in the southwest quarter of Section 2, Wabash Township, which is estimated as good for 250 bbls. initial. In the same section, the Breen Oil Co.'s No. 3 on the Breen farm is estimated at 125 bbls. The Adams Corner Oil Co.'s No. 1 well, 200 feet from the north line and 1,200 from the east line of the Edward Armstrong farm, in the northeast quarter of Section 7, is reported at 120 bbls. natural, with top of sand at 1,450 feet and drilled 38 feet in the sand. This was formerly a gas well in the shallow Bridgeport sand and drilled deeper. Joe S. Young, Jr., and other's second test, 200 feet from the north line and 600 from the west line of the Joseph Keiser farm, in the northwest quarter of the southwest quarter of Section 13, had an initial 24 hours' production of 147 bbls. Top of sand at 1,447 feet and drilled 9 feet in the sand. Mt. Carmel Oil Co.'s No. 6 well, 600 feet from the south line and 200 from the west line of the F. M. Leek farm, in the southwest quarter of Section 1, pumped 15 bbls. Top of sand at 1,547 feet and total depth of hole 1,570 feet, or 23 feet in the sand.

The Upton Oil Co. drilled a wildcat well in the southwest corner of the G. Hadden farm, in the southeast quarter of the northwest quarter of Section 15, Grandville Township, Jasper County, the well being dry at 695 feet.

In Robinson Township, Crawford County, the Ohio Oil Co.'s No. 11, in the southeast corner of the I. L. Firebaugh No. 1 farm, in the northwest quarter of the northeast quarter of Section 36, pumped 9 bbls. initial at a depth of 1,150 feet.

Huston and others' fest in the northwest corner of the J. B. Kelly farm, in the northwest quarter of Section 18, Crooked Creek Township, Cumberland County, was dry at 675 feet.

In Casey Township, Clark County, C. L. Palmer's No. 14 well, 1,320 feet from the south line and 600 from the east line of the George Smith farm, Section 13, pumped 4 bbls. at 570 feet.

### From Cisco, Texas

Elmer L. Rugh, now of Cisco, Tex., and an old-time operator and contractor in the Lima, Ohio, Illinois and Indiana Fields, in a letter to the writer states: "Just read very interesting writeup in The Oil and Gas Journal of the deep well on the Jess Middaugh farm at Bridgeport, Ill. It is interesting, as I drilled a number of shallow wells on that farm in 1906-07. As to the thickness of the Trenton rock, Lee Shaner and I drilled a well through it at Springfield, Ohio, in the winter of 1892-3. We struck the Trenton at 1,092 feet and went through it at 1,956 feet, there being 864 feet of the sand. We had 165 feet of 5⅝-inch casing in the well and never had any water until we got to 1,810 feet, and we never had anything else up to 2,035 feet. We drilled the well for P. P. Mast & Co. I did not know but what this might be of interest to you and the readers of your great publication in some way, as I know that you keep very well posted on Trenton rock development."

### Central Ohio

More activity is shown in the late reports from the Central Ohio Field than for any time for several weeks, and settled weather will bring additional work. A number of fair gas wells were found, and there is an improvement in the oil production of the field.

In Clay Township, Knox County, Roy Decker has what shows for a 2-bbl. pumper in a test in the northeast corner of the L. M. Divan 33 acres, Section 19. In Union Township, the East Ohio Gas Co. made a location for a test in the southwest corner of the K. Neff 38 acres, Section 21. In Jefferson Township, the same company is drilling No. 1 in the northwest corner of the Peter Kauffman 120 acres, Section 8, and the Upham Gas Co. is drilling No. 1 in the northwest corner of the Joseph Colopy heirs 40 acres, Section 18.

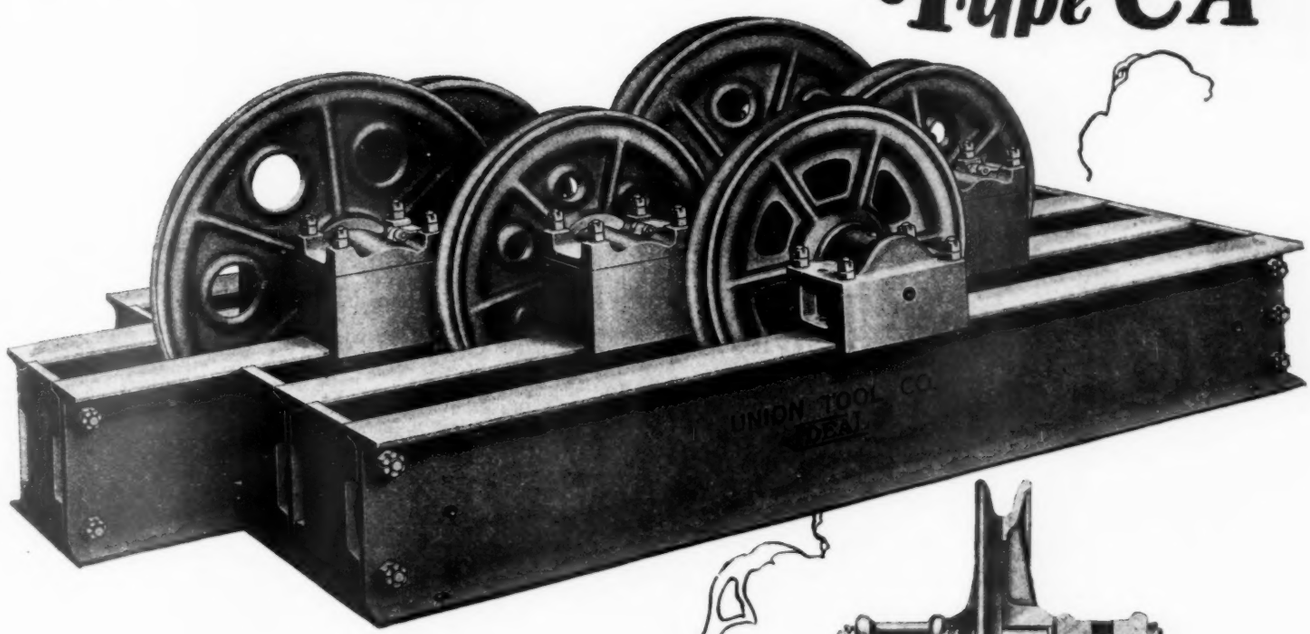
In Orange Township, Ashland County, the Logan Gas Co. has a nice gas well at a test in the southwest corner of the

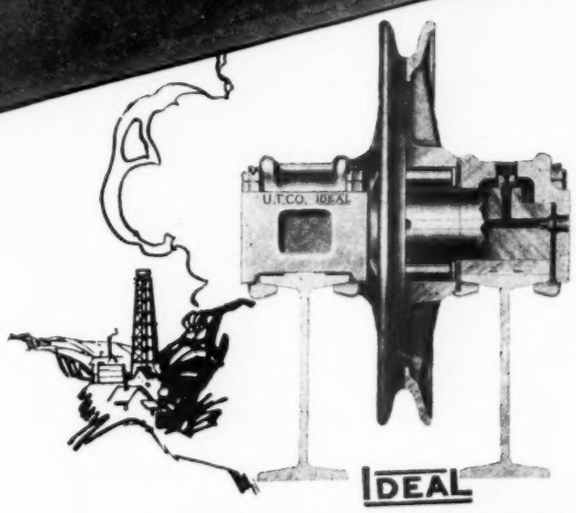
(Continued on Page 94)

# IDEAL

# CROWN BLOCK

## Type "CA"

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The
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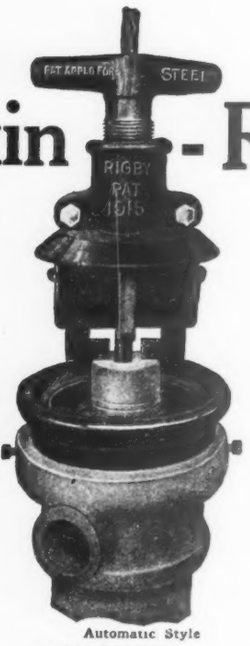


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Automatic Style

SAVES TIME by automatically latching into place and unlatching when rope socket or swab strikes it.

SAVES TROUBLE because the automatic unlatching feature prevents breakage often experienced in the set screws of old style savers.

SAVES TEMPERS for you don't get oil soaked tightening or loosening set screws.

The **Larkin-Rigby Oil Saver** is twenty years ahead of the old style saver as many users know. If YOU don't know—a single "trial" **Larkin-Rigby** will give you, we believe, an experience more satisfactory than you have ever had in using this type of equipment. Check up on this. Buy just a single **Larkin-Rigby** for trial and compare it with other oil savers.

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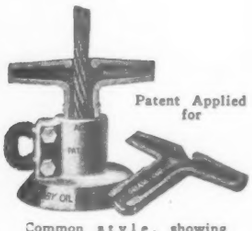
Patented 1914

California Style



Patent Applied for

Common style, showing steel hollow top grease cup.

LARKIN & CO.

Butler, Pa., U. S. A.

## EASTERN FIELDS

(Continued from Page 51)

a test on the Enoch Amos farm. It is a gasser. On Big Sandy Creek, Big Sandy district, Kanawha County, the United Fuel Gas Co. has a light gasser at a test on the E. C. Taylor farm.

In Murphy district, Ritchie County, W. A. Bickerstaff and others completed a test on the M. E. Church lot. It is a gasser in the Big Injun sand. In Union district, the Carnegie Natural Gas Co. drilled a second test on the Martin Batson farm through the Berea grit. It is dry in this formation. It was filled back to the Big Lime and shot and is good for 2 bbls. a day. In the same district, the same company has completed a test on the W. S. Chapman farm. It is a gasser in the Big Injun sand.

**Duster in Pleasants County**

In Grant district, Pleasants County, the Bradford Supply Co. and Barkwell Brothers have completed a test on the E. C. Reynolds farm. It is a duster in all sands. In Grant district, J. H. Wingrove is drilling on the F. A. Evans farm. In the same district, W. A. Connolly and others are drilling a test on the S. Pope farm. S. P. Bickel & Son are drilling another test on the A. V. Hammett farm. In Union district, Ritchie County, the Carnegie Natural Gas Co. has a rig completed for a second test on the G. L. Ballap farm. The Pittsburgh & West Virginia Gas Co. has the rig completed for a test on the Burke-Zinn farm. The Hope Natural Gas Co. has a rig up on the Harvey Dobbins farm. In Murphy district, the same company has the rig completed for No. 3 on the J. W. Gorrell farm. In Lafayette district, Pleasants County, J. H. Wagner and others have the rig completed for a second test on the S. B. Wrick farm.

**Drilling and Starting Tests**

In Grant district, Cabell County, the Aetna Oil & Gas Co. is rigging up on the J. L. Walker farm. In the same district, the Monicel Gas Co. has a rig completed on the John Findley farm. In Jefferson district, Kanawha County, the Tampico Oil & Gas Co. is drilling on the George K. Miles farm. In Scott district, Boone County, the Downing Gas Co. has started to drill on the S. E. Hill farm. In Union district, Lincoln County, Ray & Osborne are rigging up on the J. M. Breedlove farm. In the same district, the Union Oil & Gas Co. has started to drill on the James Cooper farm.

**Gilmer County**

The Star Oil & Gas Co. has rig material at locations on the S. B. Wiseman and Porter G. Nutter farms, located in Troy district, Gilmer County. In Glenville district, the Pittsburgh & West Virginia Gas Co. is building a rig on the J. R. Lynch farm. The same company is hauling tools to a location on the E. D. Fulton farm, and has made a location on the J. L. Fishback farm. In Collins Settlement district, Lewis County, the Mud Lick Oil & Gas Co. has started to drill on the E. G. Davisson farm. In Center district, Gilmer County, Okey Bennett & Co. are rigging up on the James Shook farm.

In McClelland district, Doddridge County, the Little Five Oil Co. is drilling on the Charles Digman farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. is due in the sand on the A. L. Evans farm. In the same district, the Natural Gas Co. of West Virginia has made a location on the F. M. Moore farm. In Church district, Wetzel County, the Francis Oil & Gas Trust Co. has started to drill on the Maude Six farm.

In Center district, Gilmer County, the Mill Fork Oil & Gas Co. has a rig completed on the U. S. Upton farm. In McClelland district, Doddridge County, the Norbell Oil & Gas Co. has shut down for orders at 3,100 feet on the M. Underwood farm. In Union district, Tyler County, the American Oil Development Co. is rigging up at a second test on the J. E. Cornell farm. On Laurel Creek, Union district, Wood County, the South Penn Oil Co. has the rig completed for a second test on the A. B. Howard farm.

In Birch district, Braxton County, the Pittsburgh & West Virginia Gas Co. is building a rig on the J. L. Cummings farm. In Center district, Gilmer County, the Carnegie Natural Gas Co. is building a rig on the Hennon McCartney farm. In Elk district, Harrison County, the Grasselli Chemical Co. is skidding the rig at a test on the Leroy Lance farm. In New Milton district, Doddridge County, the Carnegie Natural Gas Co. has started to drill a second test on the George Ahouse farm.

In Jefferson district, Pleasants County, the Aiber Oil Co. has a rig up for a test on the Cal Templeton farm. The same company has a rig up on the Alfred Bowie farm. On Brush Run, Smithfield district, Roane County, Godfrey L. Cabot has the rig completed for a second test on the A. J. Keffer heirs' farm. On Hughes River, Grant district, Ritchie County, B. C. Deem and others are building a rig on the P. R. Swisher farm. In DeKalb district, Gilmer County, the Pittsburgh & West Virginia Gas Co. has the rig completed for a second test on the J. S. Stalnaker farm.

In Walker district, Wood County, the Pleasant Hill Oil & Gas Co. has moved a drilling machine to a location on the Elmer Marshall farm. In Duval district, Lincoln County, E. R. Cameron is due in the sand on the George P. Anderson farm. In Sheridan district, H. H. Dial & Co. are due in the Big Injun sand on the J. M. Ferrell farm.

**Southeastern Ohio**

In the southwest quarter of Section 21, Fallsburg Township, Licking County, Guy Shafer has completed a second test on the Joseph Chaney farm. It is good for 15 bbls. a day in the Berea grit. In the southwest quarter of Section 22, Fallsbury Township, the Leonard Oil & Gas Co. has a 15-bbls. pumper in the Berea grit at No. 4 on the Power Brothers' farm.

In Section 2, Knox Township, Columbiana County, John N. Davidson & Co. have completed No. 7 on the John N. Davidson farm, not good for more than 2 bbls. a day. In Section 5, Hopewell Township, Muskingum County, the Ohio Fuel Supply Co. is rigging up at a test on the L. Varner farm. In Section 6, same county and township, M. F. Whitehill and others are spudding in No. 3 on the Boyer farm. In the southeast quarter of Section 24, the Gordon Oil Co. completed and shot in the Clinton sand No. 3 on the James Brimner farm. It is not good for more than 8 bbls. a day, and the location is 700 feet south of the second test on the same farm.

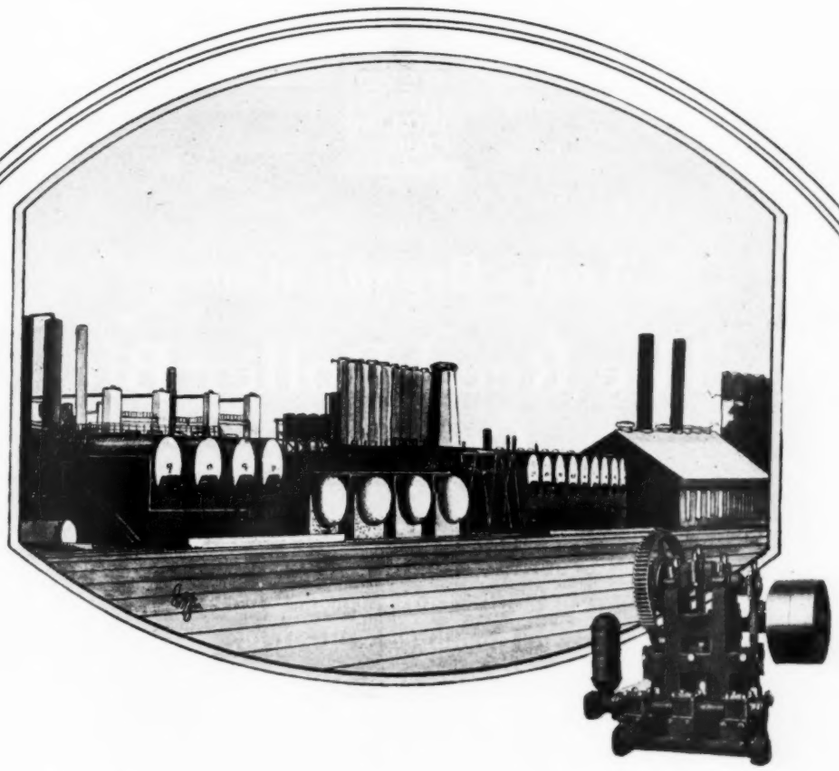
**Shallow Sand Wells**

In Newport Township, Washington County, east of production on the Adam Haas farm, Margaret Good and others have completed in the shale a test on the Margaret Good farm. It is a 5-bbl. pumper. In the northeast quarter of Section 29, York Township, Morgan County, the Pure Oil Co. has completed and shot in the Berea grit No. 12 on the G. J. Fye farm. It is good for 10 bbls. a day.

In the southeast quarter of Section 11, Island Creek Township, Jefferson County, in old territory, J. E. Turner & Co. completed No. 9 on the B. F. Brady farm, a very light pumper in the Berea grit. In Athens Township, Athens County, L. T. Bickel & Son have a light pumper at No. 5 on the G. C. Lawson farm.

In the southwest quarter of Section 21, York Township, Morgan County, the Hope Construction & Refining Co.'s test on the Charles Bailey farm is a light gasser in the Berea grit. In Lot 29, Athens Township, Athens County, Clark and others completed a test on the F. P. White farm. It is dry in the same formation. In Section 23, Hopewell Township, Licking County, the Hope Construction & Refining Co. has started to drill a second test on the S. Uffner farm.

In the southeast quarter of Section 1, Cross Creek Township, Jefferson County, Ohio, Featner & Co. completed in the Berea grit No. 5 on the McCullough Brothers' farm good for 15 bbls. a day.



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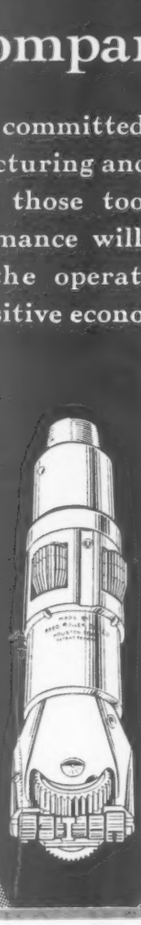
# The Reed Roller Bit Company

is absolutely committed to the policy of manufacturing and distributing only those tools whose performance will effect, for the operator, a positive economy



## Reed Roller Bit Company

HOUSTON LOS ANGELES

In the southwest quarter of Section 13, same township, Jacob Needles & Co. have drilled No. 9 on the Dean Criswe'l farm through the same formation, good for 2 bbls. a day.

In the northeast quarter of Section 26, Monroe Township, Perry County, Keller Brothers and others completed No. 25 on the George Robets farm. It is a duster in the Berea grit. In Section 18, Rumley Township, Harrison County, Mrs. L. R. Westgate had the same luck when No. 3 on the J. P. Dutton farm was drilled through the Berea grit.

**Starting Test Wells**

J. O. Harlan and others have started to drill a test on the Johnston Noland farm, in Section 8, Lawrence Township, Washington County. In Lot 1217, Sutton Township, Meigs County, the Ohio Fuel Supply Co. is drilling a second test on the Nail Salser farm. In Section 10, Hopewell Township, Licking County, the Pure Oil Co. is drilling a second test on the N. A. Coome farm.

In Lot 8, Newton Township, Licking County, Ohio, I. J. Denbow & Co. drilled No. 9 on the Carry Weiss farm through the Berea grit, good for 2 bbls. a day. In Section 21, Knox Township, Columbiana County, G. W. McLaughlin & Co.'s No. 4 on the Hoffman heirs' farm is the same kind of a pumper in the same formation.

In the northwest quarter of Section 17, Rush Creek Township, Fairfield County, A. D. Bufford and others have drilled their test on the J. C. Shaw farm through the Clinton sand, and dry. In Section 23, Reading Township, Perry County, the Stoltz Oil & Gas Co. has started to drill a test on the A. Stoltz farm. In Section 12, same township, the Ohio Fuel Supply Co. is drilling a test on the John Christ farm.

**Southwest Pennsylvania**

In Morris Township, Greene County, the Carnegie Natural Gas Co. has completed No. 4 on the C. Day farm. It is a gasser in the Big Injun sand. In Richhill Township, the same company has a very light gasser in the same formation at a test on the John Parsons farm. In the same township, Smith, McCracken and others have a gasser in the Bayard sand at a test on the Samuel Philadelphia Gas Co. has a duster in all sands at a test on the George Moore farm.

At Duff City, Allegheny county, the Altoona Oil & Gas Co. completed a very light pumper when it drilled its No. 3 on the Mohn farm through the 100 foot sand. In Marshall Township, Elliott & Co. are due in the sand at a test on the Elliott farm. In Ross Township, Mellon & Pollock have a 4-bbl. pumper at a test on the Kirsh Brothers' farm.

**Greene County Tests**

In Morris Township, Greene County, the Carnegie Natural Gas Co. is due in the sand at tests on the L. B. Shape and Charles Reese farms. The same company has started to drill on the R. R. Baldwin farm. In Franklin Township, Elliott, Moore & Co. are drilling on the J. A. Reese farm. In Center district, the Philadelphia Oil Co. is due in the sand on the George Moore farm. In Washington Township, the same company is fishing at a second test on the T. J. Huffman farm.

In Gilmore Township, Greene County, the Manufacturers Light & Heat Co. has a good gasser in the Big Injun sand at No. 4 on the L. B. Clovis heirs' farm. In the same township, Cobert Brothers have a gasser good for 1,350,000 feet at a test on the Arthur Main farm.

## CALIFORNIA FIELDS

(Continued from Page 47)

of only a part of it, as some are inclined to believe. G. J. Magenheimer's No. 1 Hartman, north of the Bolsa Chica's property, is still held up as a result of a fishing job. The Ventura Avenue Field produced 1,450,880 bbls. during August, a daily average of 46,830 bbls., compared with 43,025 bbls. per day during July. Present production is running around 50,000 bbls. a day but should start climbing again soon.

Daily production of the Long Beach Field is still headed downward and, due to the unsatisfactory condition of the northwest extension, the field will undoubtedly register still further declines during the next 60 days. The average daily output of the entire field during August was 100,355 bbls., compared with 106,143 bbls. daily during July and approximately 97,000 bbls. daily at present. Development work in the northwest extension is practically at a standstill, although a few operators are making a last determined effort against great odds to return their wells to production either in the upper or lower zone. That a considerable number of wells in the extension have been standing idle for several weeks is evidenced by the fact that there were 780 wells producing during July and only 751 during August.

The only possibility of arresting the almost certain decline in production during the next several weeks lies in the development work in the older section where several wells are being drilled at present. It is doubtful, however, whether their combined production will be sufficient to stop the settling expected to take place during this period. If the General Petroleum's No. 7 K. & H. comes up to expectations it should bolster up the field production temporarily but the tendency is decidedly downward and will continue until the bottom is reached. This well, which was carried down to 5,100 feet, should be on production within a few days, and as it has several hundred feet of oil-bearing formation, it should be good for somewhere around 500 bbls. a day. The Union, California Petroleum, San Martinez and Julian Petroleum are drilling one or more wells in the older section and, while nothing big is anticipated, they are expected to finish fairly good wells within 60 days.

It is rather difficult to make any reliable estimate on what the field may be doing 60 days hence but it is doubtful if it will be doing more than 90,000 bbls. a day. Walter P. Temple has not yet put his No. 5 Cerritos, a deep test in the northwest extension, on a production test but it is scheduled to be bailed from 5,790 feet within a few days. The possibility of securing commercial production in a third zone is rather remote. The Rio Grande Oil Co. has not done any additional drilling on the Municipal property since taking it over from the Ramsey interests several months ago, but it is understood the company contemplates some development work. This lease will hold one or two more wells and it is probable these locations will be drilled up soon. The California Petroleum recompleted its No. 1 Cerritos early in the week in the deep sand at 4,826 feet and the well was returned to production pumping 140 bbls. of 22.6 gravity oil daily.

**Inglewood**

Production of the Inglewood Field has shown a decided downward tendency for several weeks and, since there are only three or four drilling projects in the entire field, it is believed this drop will continue during the balance of the year unless operators undertake to develop the heretofore undrilled lower zone. The field's daily production has been dropping off from 2,000 to 3,000 bbls. each month and, while this decline might be temporarily arrested by installing compressors, no move has been made along this line. The Standard is the only operator engaged in drilling new wells at Inglewood, due principally to the fact that most of the other acreage has been drilled up. This company still has a few locations available and will probably continue to run one or two strings of tools until drilling obligations on its various holdings have been completed. During August, Inglewood produced a total of 1,386,547 bbls., or 44,727 bbls. daily, a drop of 1,777 bbls. per day from the output during July.

**Torrance**

The Chanslor-Canfield Midway Oil Co. added another new well in the Torrance Field by completing No. 55 Del Amo at 3,695 feet. It started off pumping 130 bbls. of 18.1 gravity oil daily and, while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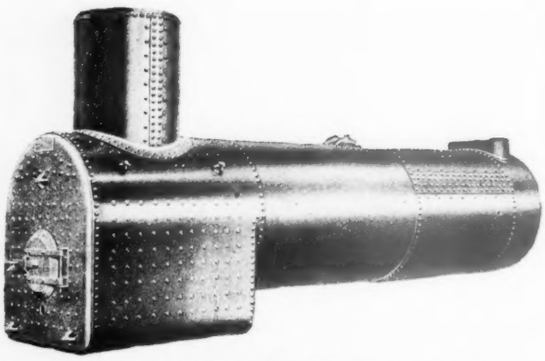

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the output is cutting about 6 per cent, it will probably clean up after the well has been on production for a few days. The Chanslor-Canfield interests are drilling three other wells on the Del Amo property and, since rigs are standing for Nos. 44, 50 and 56, it is believed the company will probably continue to run three or four strings of tools during the next several months. Only a limited amount of drilling has been done in the Torrance Field during the past year and as further development would not warrant the expenditure necessary, it is hardly likely any of the larger operators will undertake any more work. The Chanslor-Canfield Midway Oil Co., of course, is in an advantageous position due to its large holdings and these properties will be developed as occasion demands. Daily production in the Torrance Field during August averaged 28,072 bbls. daily, about the same as during July.

The Pan American made a production test on No. 1 Chancorina in the Rideout Heights section of the Whittier Field early in the week and the well made 50 bbls. in 10 hours before sanding up. The company immediately re-entered the hole and the well will be put on another pumping test. The outlook is rather encouraging and if this well is finished as a commercial producer it is possible several more holes will be started within a month. With the exception of this well, none of the other drillers in this area showed any improvement. No. 1 Broderick of the Pan American at 5,200 feet, No. 1 Heights of the Petroleum Securities at 4,665 feet and No. 4 Seward Rideout of the California Petroleum at 3,900 feet have yet to encounter any horizon capable of yielding commercial production.

The Associated spudded in a new well, No. 5 Dewenter, in the Santa Fe Springs field and this hole will probably be ready for a production test along about December 1. The General Petroleum and Standard are expected to finish new wells within two or three weeks, as the former's No. 22 Santa Fe is drilling ahead at 3,745 feet, while the latter's No. 19 South Whittier Community is making hole in a hard sandy shale at 3,760 feet. Development work in the Montebello district for several months has been unusually successful and, judging by the recent showing made by the Standard's No. 1 Benedictine, the productive limits of the field will be extended several hundred feet west.

**Producer Expected**

This well, notwithstanding that a water shutoff had not been effected, shot oil and gas over the crown block and has all the earmarks of a successful producer. That the Standard anticipates at least a commercial producer is evidenced by a rig going up for a new well, No. 1 Whitehead, still further west of No. 1 Benedictine. The company also spudded in No. 4 Howard & Smith and stepped up work on the Baldwin lease by abandoning No. 61 because of a difficult fishing job and skidded the rig to a new location 25 feet north. H. L. Whiston, who has always been of the opinion that the Montebello Field was not entirely defined, is tearing down the rig for No. 2 Bicknell due to recent developments which indicate this property is too far removed for production. Although he was successful he at least has the consolation of knowing that his judgment was correct. Whiston erected a 140-foot derrick and drilled a deep test on this lease a little over a year ago and, while one or two gas showings were encountered, commercial production was not secured. The St. Helens Petroleum which has been rather successful in developing its holdings in this field, should finish two more wells soon, No. 3 Mulholland and No. 13 Monterey. The former is being temporarily held up with a fishing job but an early recovery is anticipated.

**Seal Beach**

Work in the new Seal Beach Field is progressing in a satisfactory manner and the three wells now drilling in practically proven territory should be in a position to make a bid for production probably late in November. The Marland is drilling two holes, No. 1 Selover at 1,500 feet, and No. 3 Bixby at 280 feet, while the Standard is concentrating its attention on No. 2 San Gabriel, which has just passed the 500-foot level. It is believed these two companies will spud in another well or two as rigs are going up for additional work. The Associated is also expected to drill a new well in this field and it will probably be located in the western part of the Hellman lease, which seems practically assured of at least small production. No further steps have been taken toward lifting the drilling restrictions in the Alamitos Heights town lot area west of the Seal Beach Field, although it has been suggested the Pan American be given a permit to drill a test on a 5-acre tract which the company holds under lease in that district. If this suggestion meets with approval the question of limiting or removing the drilling restrictions in Alamitos Heights will remain in status quo pending the outcome of the Pan American's test.

The Shell's No. 12 Orange, a new well finished in the Fullerton district at 4,854 feet, was somewhat of a disappointment from a production standpoint, as the output, 250 bbls. of 25.1 gravity oil daily, is cutting approximately 15 per cent. The well is flowing through a ½-inch bean under a pressure of 350 pounds and as the oil is not emulsifying the production is expected to clean up. The Shell has two additional drillers on this lease, and it is believed these two wells, Nos. 11 and 13, will be tanking oil within two or three weeks ,as both have just passed the 4,850-foot level.

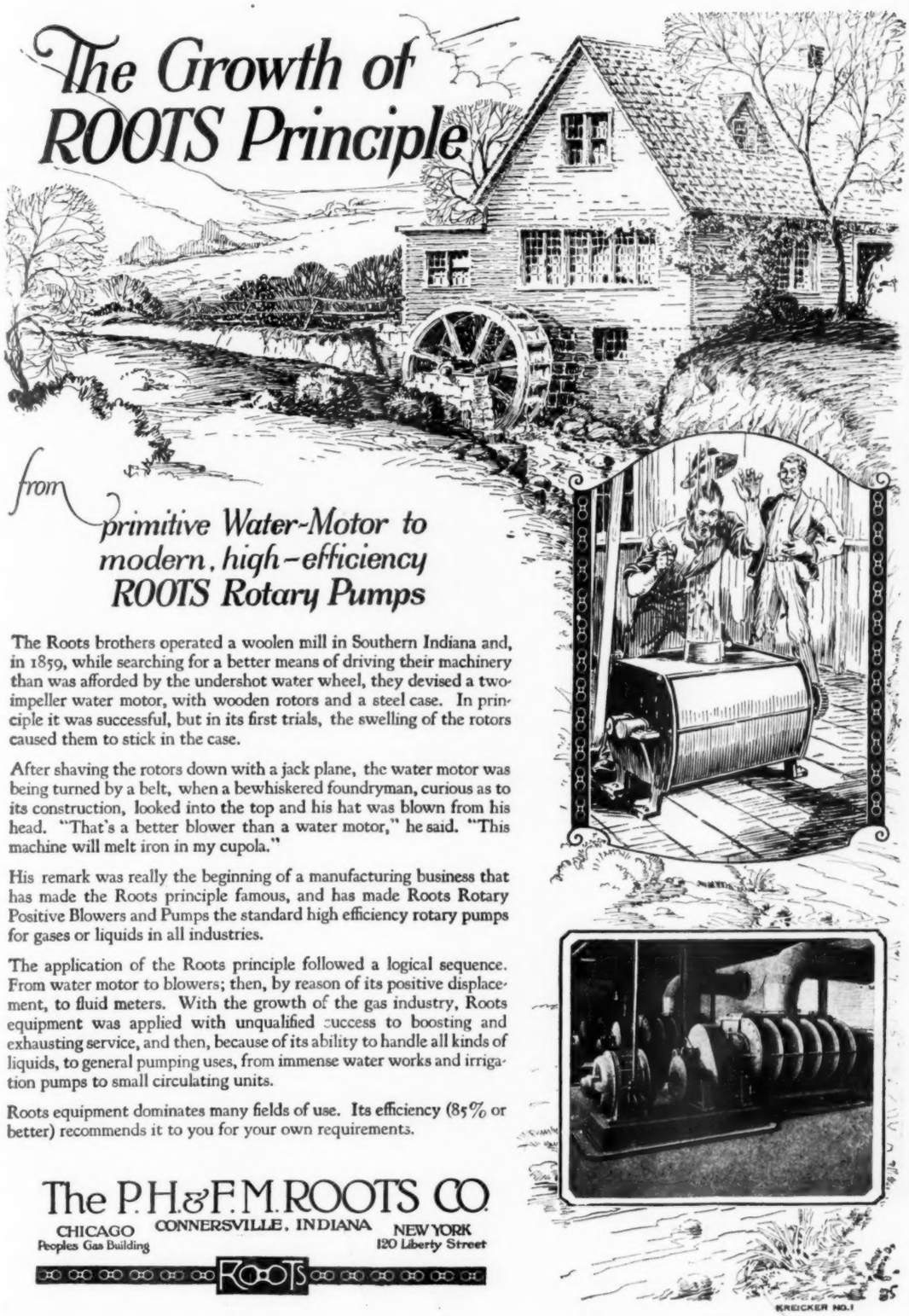
**Union's Good Well**

The Union finished a dandy well when No. 11 Yorba Linda Group at Richfield was returned to production after being redrilled and deepened to 4,560 feet. It registered an initial output of 580 bbls., the oil testing 22.7 degrees and showing practically no cut. The company's No. 66 Stearns at Fullerton, which made a preliminary flow a few weeks ago, is being listed for completion at 4,863 feet. The initial output showed a rather large cut but the present production, 1,000 daily, tests 26.9 degrees and shows but a trace of water. The Union has three other drillers on the Stearns lease, one of which, No. 57, is drilling ahead in the oil sand at 3,640 feet.

The General Petroleum's No. 12 Tonner at Fullerton proved to be a dud at 4,993 feet, as the best it would do was 20 bbls. daily on the beam. The well is somewhat of a freak in as much as it is in proven territory and should have been good for at least 250 bbls. a day. A very appreciable increase has been noted in the amount of drilling undertaken by operators in the Richfield, Montebello and Fullerton districts during the past several months and it is likely work will continue all winter. Something like 15 new wells have been started in these three districts alone during the past month, among which are the Associated's No. 1-A Bayha, the Brea Canyon's No. 40, the Fullerton's No. 21, the Standard's No. 23 Kraemer, No. 9 Thompson and No. 4 Hugo of the General Petroleum, Nos. 5 and 6 on the Richfield property of the Chanslor-Canfield Midway Oil Co. and No. 69 Baldwin and No. 4 Howard Smith of the Standard. These wells will be supplemented within a few weeks by additional work projected by some four or five more operators.

S. H. Keoughan, trustee in California for the Continental Oil Co., has a rig going up for No. 3 Kraemer, on which property the company has built up a daily production of somewhere around 600 bbls., and spud will be made about October 1. The Chiksan Oil Co. has taken over the Dixon lease, held at one time by the Union Oil Co., and a steel rig is under construction. The General Petroleum has several rigs going up on the Stern property at Richfield, while the Shell has one each on the Fisher and Puente leases at Fullerton. The Chanslor-Canfield Midway Oil Co. temporarily suspended work on its deep test, No. 96 Olinda, in the Fullerton Field at 8,046 feet but is contemplating an early re-

# The Growth of ROOTS Principle



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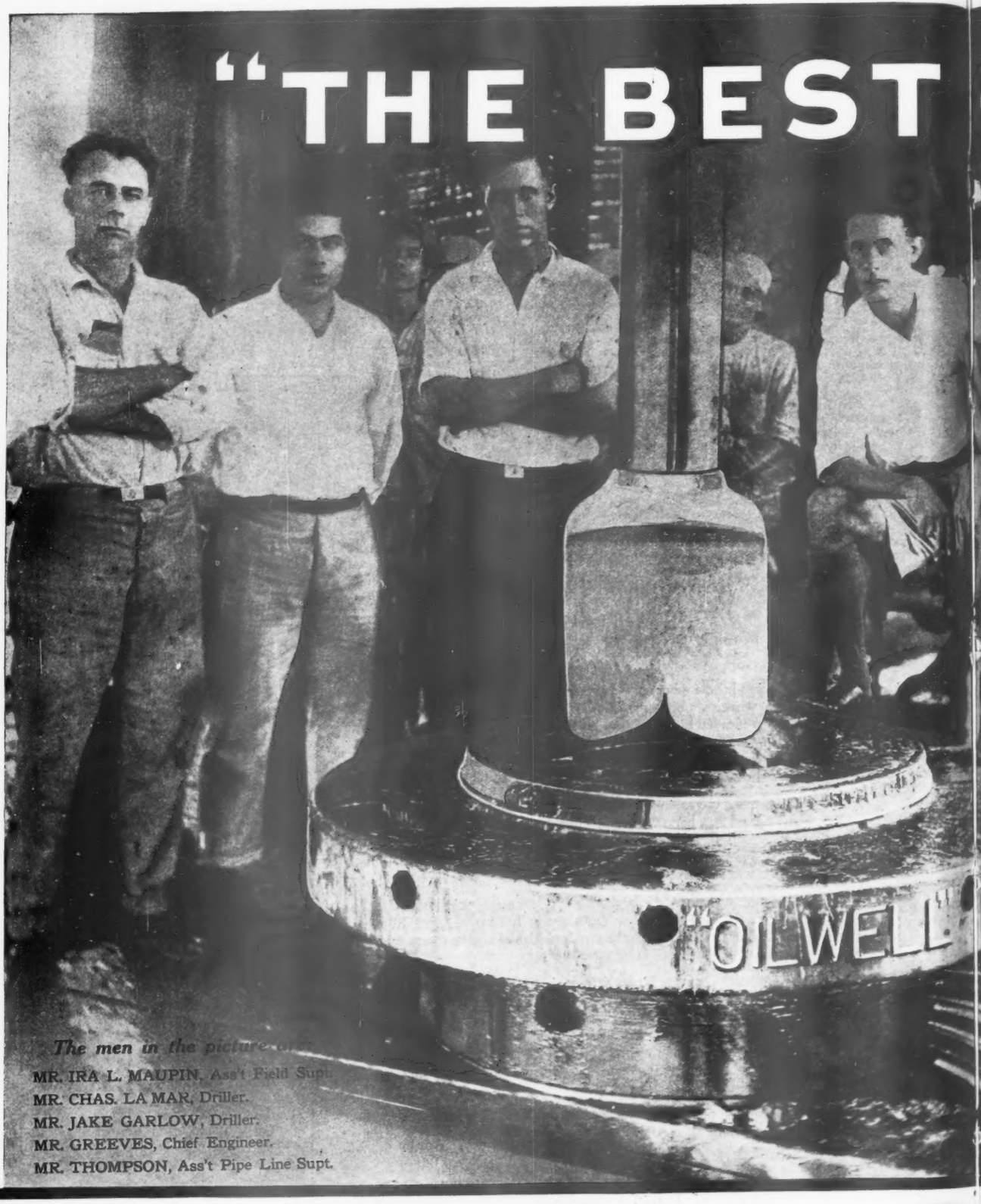


*The men in the picture*
MR. IRA L. MAUPIN, Ass't Field Supt.
MR. CHAS. LA MAR, Driller.
MR. JAKE GARLOW, Driller.
MR. GREEVES, Chief Engineer.
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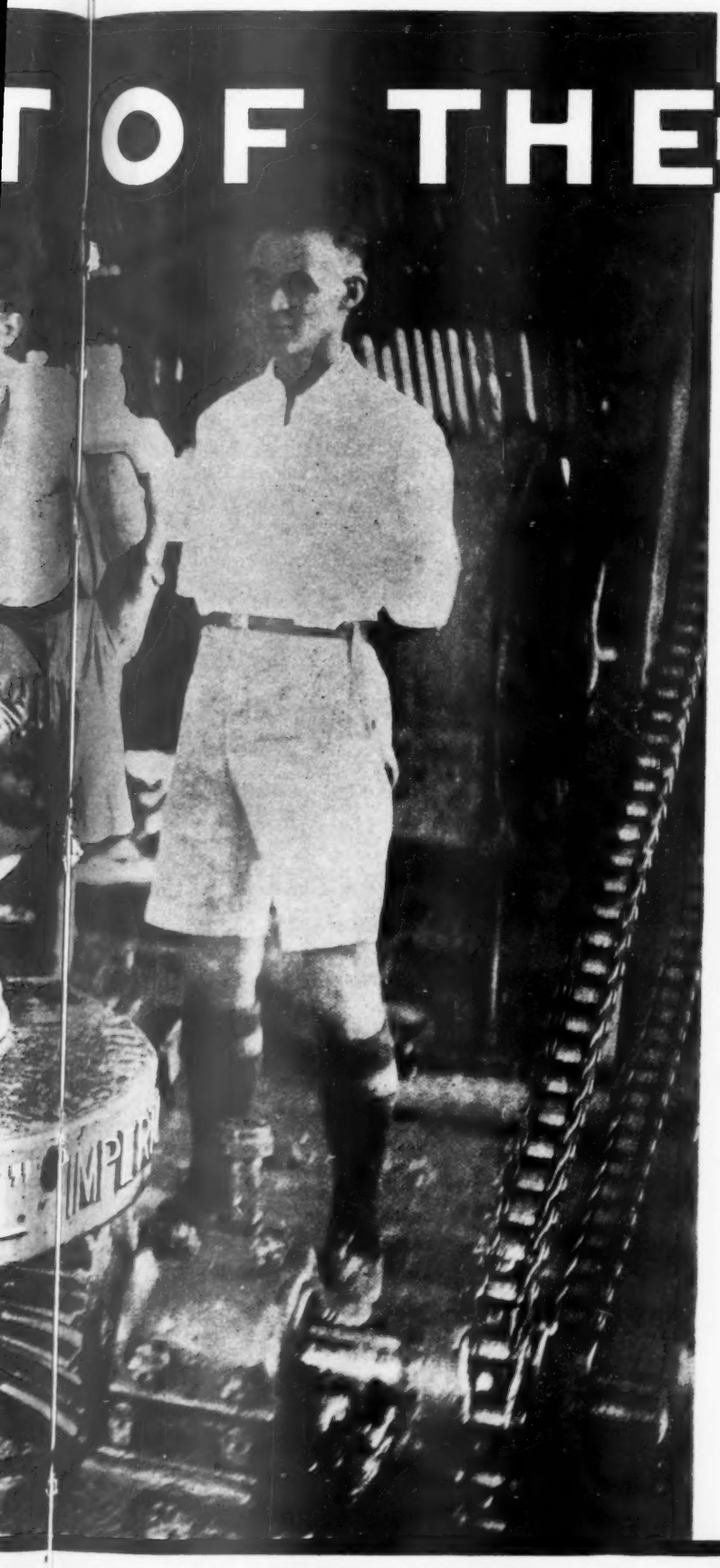

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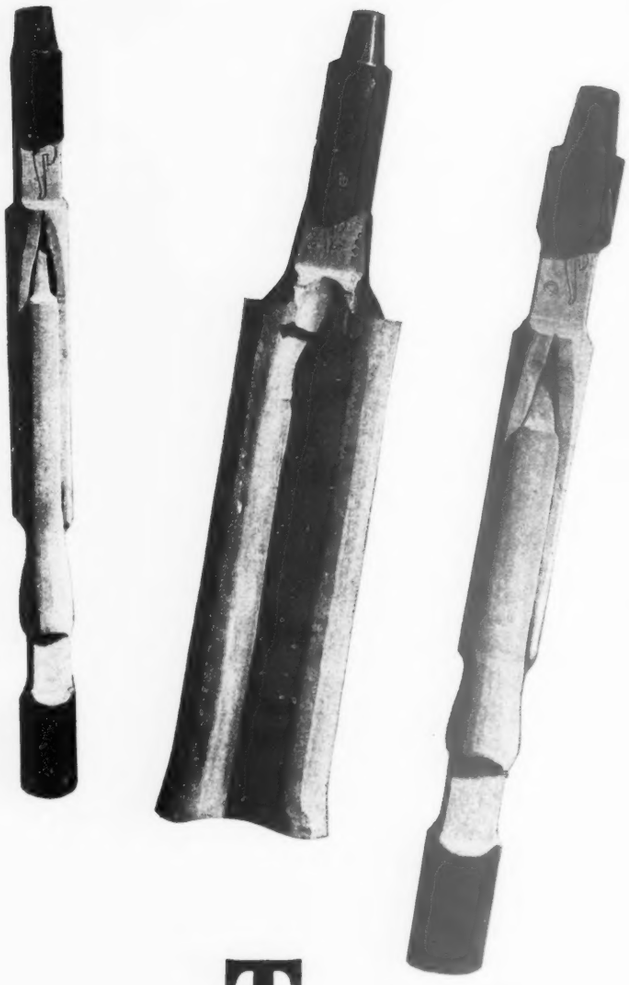

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sumption of work with a view to carrying the hole down another 500 feet. The temperature at the present bottom, 8,046 feet, is reported to be approximately 220 degrees.

**Midway-Sunset**

There were several small wells finished in the Midway-Sunset area, the largest being the Standard's No. 7 in Section 17-32-24, which resulted in a 320-bbl. pumper from 3,495 feet, the oil testing 26.2 degrees and showing a cut of 2 per cent. The Honolulu's No. 84 in Section 4-32-24, was good for 80 bbls. a day on the beam at 3,190 feet. The Gore Oil Co. succeeded in finishing No. 12-B in Section 21-32-22, as a 35-bbl. pumper from the 900-foot level. King Gillette is the largest stockholder in the Gore Oil Co. and it was through his initiative the property has been developed. The Union Oil Co. had the misfortune to encounter water trouble in No. 1 Houchin out in the Maricopa Flats and as a result another cement job will be necessary at 5,604 feet. The company's No. 2 Boss, a short distance away, is standing cemented in the brown shale at 5,100 feet.

The Union succeeded in finishing the second producer in the Mount Poso district when No. 1 Sarret in Section 4-27-28, a direct offset of the Shell's No. 1 Vedder, the discovery, came in pumping 300 bbls. from 2,053 feet. This well is of particular importance as it tends to throw the structure somewhat further north than expected and makes the fee holdings of the Union like a million dollars. Neither the Union nor Shell has yet made any move to lay a pipeline from this new field but it is extremely likely the Union will undertake to lay either a 4-inch or 6-inch from this area to Kern River.

The Shell cemented a string of 11-inch in No. 2 Vedder at 1,603 feet early in the week and this well is due in within 10 days. The Petroleum Securities is considering the advisability of abandoning its No. 1 in Section 8-27-28 due to the unfavorable outlook and work has been suspended at 2,367 feet. None of the other drillers in this field showed any encouragement and, due to delays, it probably will be another 30 days before anything definite is determined.

**Southern California Wildcats**

The most important development in southern California from a wildcatting standpoint was the showing of oil found by the Associated in its No. 1 Cypress, a test in the Inglewood quadrangle, in Section 34-2-14. Some very encouraging showings were logged around 3,650 feet and, while this particular sand will not prove productive, it has improved the outlook considerably and the well will probably bear watching for the next 1,000 feet or so. Another important development of interest to southern California wildcatters was the consummation of a deal between the Marland and General Petroleum whereby the latter has acquired a part of the former's holdings at Sunset Beach. The area involved lies approximately midway between the recently discovered Seal Beach Field and the Huntington Beach district to the south. Practically all available territory at Sunset Beach has been blocked out by the Marland, Shell and Associated and if production is developed these three companies will undoubtedly control the entire structure. The General Petroleum has agreed to drill a test well within 60 days on the acreage subleased from the Marland.

Several southern California wildcats were abandoned during the week due to the failure to develop production but they were practically offset by new work. Featherstone & Preston ran into an unfavorable formation in No. 1 Blinn at 4,185 feet and, while the well has not actually been listed for abandonment, work has been indefinitely suspended. This well is near Clearwater in Section 16-3-12. The Winwell Oil Co. at Hawthorne has also suspended work and it is understood it will be abandoned. The Petroleum Securities spudded in No. 1 DeBaker, a new wildcat in the Bandini area and, while good footage is being made, the hole is really just getting under way.

The Dominguez Extension Oil Co. has just about finished rigging up No. 1 Compton, a test to be drilled north of the Dominguez Field, Section 27-3-13, and spud will probably be made within a few days. J. P. Sweeney and E. L. Craigen have secured a lease on the J. H. Macklin property in Soquel Canyon in Section 6-3-8 and, while material is not yet on ground, it is understood that the lease calls for early work. None of the three principal wildcats in the San Fernando Valley showed any improvement and, since the formation is favorable in each case, they still have possibilities. The Standard's No. 1 University at 4,100 feet is the deepest with No. 1 Sesnon of the Petroleum Securities a short distance behind at 3,800 feet. No. 1 Community of the Van Nuys Oil Co. was down 3,734 feet yesterday in a hard sandy shale. None of the other various wildcats in southern California showed any change, although some additional hole was made.

**Northern California Wildcats**

The Bolsa Chica Oil Co. is making a test of its wildcat in the Kettleman Hills and, while the outlook is exceptionally favorable for at least small production of heavy oil from 2,365 feet, the company has assumed a conservative attitude and will await the outcome of a thorough pumping test covering several days. E. A. Parkford is erecting a rig near Strathern in the Simi Valley, Ventura County, and while it was originally believed he only contemplated drilling a shallow test, the erection of a 135-foot steel rig indicates a deep hole will be drilled. The Union is still drilling ahead on No. 2 Theta, a structure survey hole in Kern County, Section 23-28-20. This is the third of a series of structure holes drilled on the company's property west of the Belridge Field. It is understood some information has been secured as the result but the location of the projected deep test has not yet been determined.

The Milham Exploration Co. finally got under way with its Buttonwillow wildcat in Section 8-21-23, but it will be two or three weeks before the hole is deep enough to prove of interest. The territory in and around Famosa is coming in for some additional play but since work in this area will not require more than 3,500 feet of hole, it will not take very much time to prove or disprove this acreage.

## CANADIAN FIELDS

(Continued from Page 45)

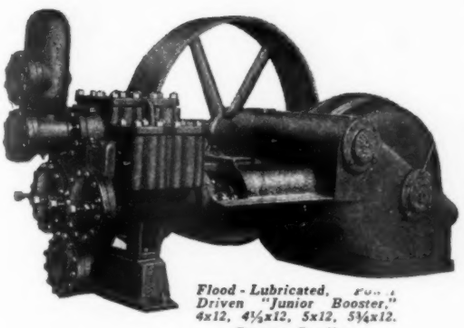
the small showings of light crude encountered in the Dakota sands in the Turner Valley Field. It is expected that a very little additional drilling will bring in the well.

McLeod Oil Co. No. 2, LSD 16, Section 1-20-3w5, has finished installing a separator to handle its wet gas production. The well is reported making between 2,000,000 and 3,000,000 feet a day wet gas, which will, it is thought, be increased if the lost bit can be recovered. A small shot of dynamite was tried to loosen the bit, but results of the shot cannot yet be determined.

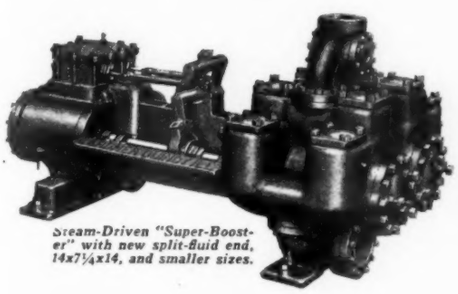
**Unique Operation**

Canada Southern Oil & Refining Co. No. 2, LSD 9, Section 1-20-3w5, which recently resumed drilling at the 2,436-foot level, is reported drilling at 2,510 feet. Open hole will be drilled as far as possible, after which 6¼-inch seamless casing will be set above the limestone. The 8-inch casing is being set at 2,430 feet. Canada Southern No. 1 was the old Prudential well, started in the latter days of the Calgary boom, and which got a small production of light crude around 2,400 feet. It was later taken over and pumped for some years by the Canada Southern Oil & Refining Co. Early last year production practically ceased, when it was found that 560 feet of 8¼-inch casing had parted at the bottom of the well, interfering with pumping operations. A veteran driller, Charles Nolan, after several unsuccessful attempts to overcome the difficulty undertook to sidetrack the lost casing, and successfully drilled past

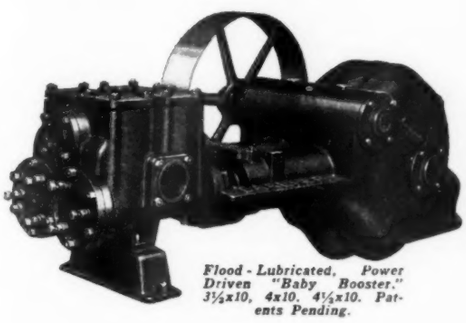
# 3 TYPES OF MUD PUMPS



*Flood - Lubricated, Power Driven "Junior Booster," 4x12, 4½x12, 5x12, 5¾x12. Patents Pending.*



*Steam-Driven "Super-Booster" with new split-fluid end, 14x7¼x14, and smaller sizes.*



*Flood - Lubricated, Power Driven "Baby Booster." 3½x10, 4x10, 4½x10. Patents Pending.*

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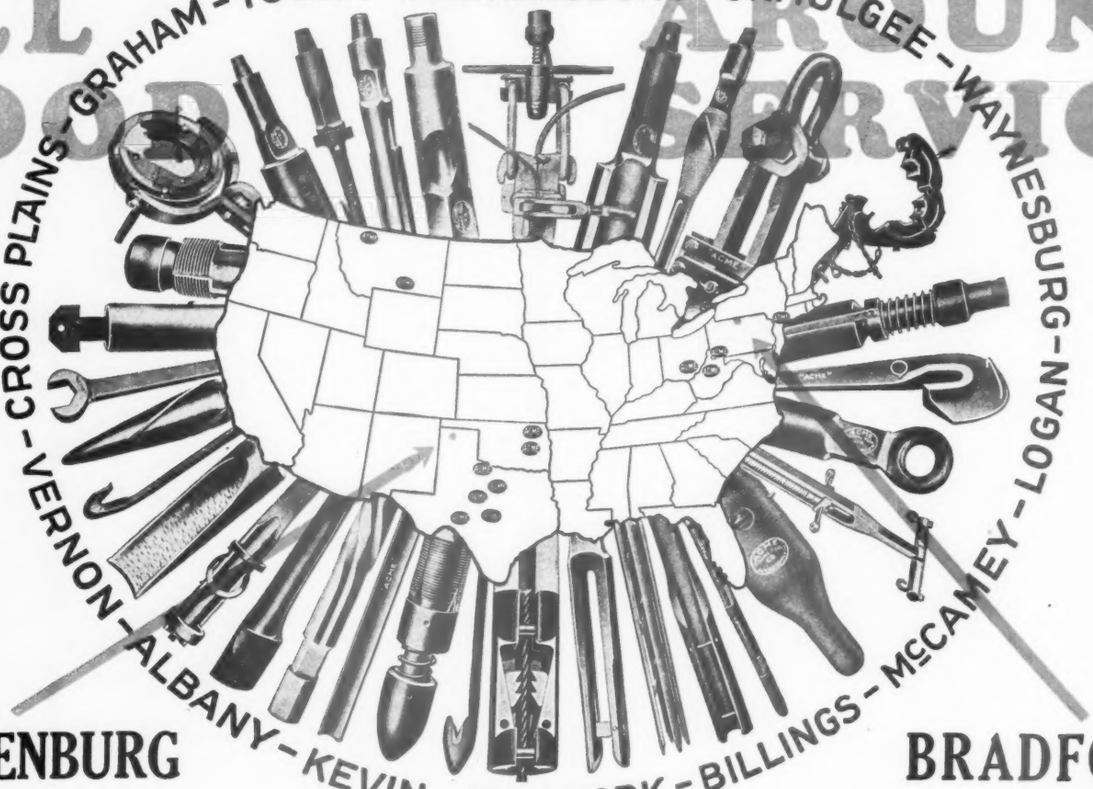


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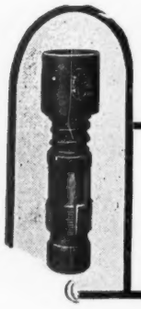

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the whole 560 feet of the old string until the old producing horizon was reached and the well once more put on the pump, bringing it back to a pumping production of 15 bbls. a day. Nolan's stunt is believed to be unique in drilling operations.

Big Chief Oil Co., Section 5-20-2w5, after cementing to stop caving at 2,250 feet is reported at 2,500 feet and drilling, with the 10-inch casing cemented at 2,400 feet. Advance Oil Co. No. 2, LSD 14, Section 20-19-2w5, which got a fair show of light oil in the Dakota sand at 1,750 feet is reported at 1,845 feet and drilling, and should be close to the second oil sand encountered in the Home well. A second small show was met at 1,780 feet. Calmont Oils, LSD 2, Section 1-20-3w5, is at 2,210 feet and drilling open hole for the 12-inch casing. This test entered the Dakota sands between 2,000 and 2,100 feet, and has encountered two small gas shows.

Home Oil Co., LSD 10, Section 20-19-2w5, has set the 12½-inch casing at 2,110 feet and resumed drilling. Three oil sands, at 1,950, 2,002 and 2,110 feet, have been met, with an estimated production around 25 bbls. a day, but the oil is being shut off and the well continued to test the lower horizons.

### Diamond Drill Test

Illinois-Alberta Oil & Refining Co., LSD 14, Section 12-20-3w5, is reported at 3,703 feet with a diamond drill test. The test is about 50 feet in the Madison limestone and the cores show considerable traces of high gravity crude. Dallas Oil Co. No. 1, LSD 11, Section 20-19-2w5, is at 3,100 feet and running 8¼-inch casing which will be carried down behind the drill by underreaming.

Great West Oil Co. No. 1, SE Section 7-20-2w5, is reported drilling at 4,620 feet after setting the 8¼-inch casing at 4,470 feet. The test has been making as much as 60 feet a day in the very hard formation, with a small gas flow.

Stockmen Oils, Ltd., Section 27-20-3w5, has resumed drilling at 1,285 feet after setting the 15½-inch casing. New Black Diamond Oil Co., LSD 1, Section 3-20-3w5, is drilling below 1,200 feet and has encountered several small pockets of gas in a formation interspersed with bands of hard shale. New McDougall-Segur Oil Co., LSD 14, Section 12-20-3w5, entered the Dakotas at 2,170 feet and is now drilling in a hard sandstone at 2,240 feet with showings of oil and gas.

Okalta Oils, LSD 1, Section 1-20-3w5, is rigged up ready to spud in, except for the boiler, which is held up at Okotoks by bad road conditions. British Dominion No. 1, LSD 4, Section 5-20-2w5, is at 2,450 feet and drilling. Cooper-Nanton Oils, LSD 2, Section 7-20-2w5, is at 3,400 feet and drilling. New Valley Oil Co., LSD 4, Section 6-21-2w5, is at 1,150 feet and drilling.

### Moose Mountain

In the Moose Mountain Field, Cherokee Oil Co., Section 33 23-5w5, is at 1,894 feet with a diamond drill test. The cores showed oil at 1,882 feet in fair quantities, with a second smaller showing at 1,894 feet, and the well has a considerable flow of gas. The test is now in the Dakota formation. Wabash Oils, Morley Reserve, is working on derrick, with considerable machinery on the ground. Signal Hill No. 2, LSD 9, Section 34-23-5w5 is drilling below 1,000 feet. Reserve Oils Morley Reserve, is drilling close to 2,000 feet.

Caledonia Oil Co. has recently been organized with a capitalization of 500,000 no par shares, and head office at Calgary. Officers are: President, J. J. Maloney, Hamilton, Ont.; vice president, John Scott; secretary-treasurer, James W. Townsend; directors, J. Cameron Smith, Silton, Sask.; G. W. Hewelcke and D. A. Lane. The company has located a test 7 miles north of the Prince of Wales ranch in LSD 16, Section 33-17-3w5, on the Sinclair structure, and is planning to test the Madison limestone, which is thought to be within 3,000 feet of the surface.

In the Drumheller district, the Oil Exploration Syndicate, organized by Drumheller business men, has filed on considerable acreage and has made a tentative location about 3 miles north of Drumheller.

In the Wainwright Field, east central Alberta, Emerald Oils, LSD 8, Section 30-45-6w4, has recovered the lost bit and resumed drilling at 2,100 feet. At this depth a tight oil sand failed to develop commercial production and drilling is being continued to the lower sand. National Exploration Co., LSD 1, Section 30-45-6w4, has derrick up and is waiting for machinery. Western Consolidated No. 2, Section 30-45-6w4, which has been waiting for cement to set, is being drilled in. Edmonton-Wainwright Oils, Ltd., LSD 4, Section 29-45 6w4, is reported shipping crude to the Edmonton refinery.

### Company Meetings

Plateau Oil Co. has been organized with head office at Edmonton and authorized capitalization of 300,000 no-par shares. Officers are: President, Frederick L. Knapp; vice president, Nick Nicholson; secretary-treasurer, F. B. Pennock; directors, Cosmo Picariello, Nicholas Carline, W. A. Douglas, all of Edmonton. The company is planning to construct 6 miles of 6-inch pipeline with necessary feeders to connect the Wainwright Field with the new Kling-Del refinery at Wainwright, cost of the system being estimated at $100,000.

Shareholders of the Grattan Oil Co. of Edmonton, the pioneer company to test the east central Alberta Field for oil, met at Edmonton recently. The company holds considerable acreage in good standing and arrangements are being made for tests by other companies on a royalty basis. Officers of the company are: President, R. B. McLeish; vice president, R. W. Jones; directors, W. G. Macfarlane, George Beart.

In the Ribstone Field, C. J. Head, representing English interests, is reported to be investigating the holdings of Gordon Beattie and associates, covering 15,000 acres, with a view to extensive development. The acreage lies north of Ribstone. In the field, Imperial-Ribstone No. 1, Section 5-45-1w4, is at 210 feet and drilling. Ribstone Oils, LSD 1, Section 1-46-1w4, is down 400 feet and drilling. Advance Oil Co. No. 3, LSD 1, Section 16-45-1w4, is at 50 feet and drilling. E. P. Rowe of Toronto is reported shipping two drilling outfits to the field. Oil Producers Corp. of Canada, backed by Montana interests, has located a test in Section 14-44-2w4, but will not drill until results of the drilling already started by other companies are definitely known.

### British Columbia

In British Columbia, the Empire Natural Gas Co. deep test, LSD 8, Section 27-10-E.C.M., in the Fraser Valley, is at 5,743 feet and fishing. Sumas Oil Co., Section 27-19-E.C.M., is shut down at 700 feet waiting for casing, after encountering a small show of gas.

In Saskatchewan, Unity Valley Oil Co. No. 1, SE Section 23-14-24w3, is at 1,810 feet and drilling in a very hard brown sandstone, after shutting off the gas flow encountered in the upper horizons.

In Ontario, Imperial Oil, Ltd., is putting down a series of shallow diamond drill tests in the old Bothwell Field with a view to ascertaining the possibilities of the shallow sands for oil recovery by the Ranney mining process. Pending the completion of the diamond drill tests, no decision has been reached as to the development work to be undertaken in this or other shallow fields.

Malcolm Riker of Detroit, who has been engaged for several months past in testing the possibility of increasing oil production in the Petrolia shallow field by application of electric current has discontinued operations. Mr. Riker's idea was to heat the rock at the base of the well by means of electricity, and thus dissolve the paraffin and permit the oil to flow freely. Mechanically the operation was a success, but the production secured was too small to warrant the expense of equipment and current. The production in several wells was considerably increased, and this increase will, it is anticipated, be maintained until the paraffin condition again sets in.


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| 3 | 15 | 4¼ | 2¼x3¼ | 5 | 55 |
| 4 | 18 | 5¾ | 3½x4½ | 5 | 70 |
| 4 | 20 | 5¾ | 3½x4½ | 5 | 75 |
| 6 | 18 | 7¾ | 5 x6 | 4 | 130 |
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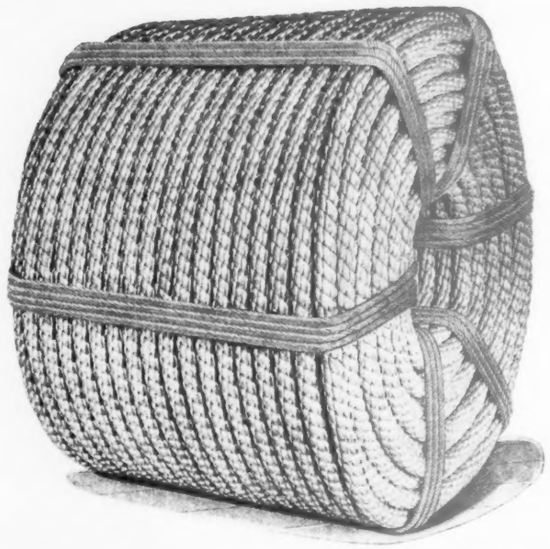

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## LOUISIANA-ARKANSAS

(Continued from Page 43)

59 feet. Rovenger Oil Corp.'s No. 4-B Goodwin, Section 16-17-16, is a 40-bbl. pumper in sand at 2,106-24 feet. Roxana corporation's No. 3 Willett, Section 3-17-16, was credited with 35 bbls. on the pump at 2,080 to 2,100 feet and No. 4 with 22 bbls. from sand at 2,086 to 2,115 feet.

New work in Smackover lagged last week. G. J. Child's No. 4 fee, formerly No. 3, Section 8-16-16, is drilling at 350 feet. Gladys Belle Oil Co.'s No. 5-A Cook, Section 16-16-15, has 1,000 feet of oil in the hole from sand at 2,618-30 feet and is waiting for a standard rig; No. 9 Cook, same section, is drilling at 1,000 feet. Ten-inch casing was set at 135 feet at Grimes & Jones' No. 10 Van Hook, Section 8-18-14. Gulf company's No. 42 Hardy-Murphy, Section 3-16-15, is drilling at 2,235 feet; No. 43 in Section 3 at 75 feet; No. 48 L. Werner Co., Section 6-16-16, is waiting for 6-inch to set at 2,219 feet. Hollyfield and associates' No. 13 Giller, Section 10-16-15, is being bailed to test at 2,006 feet. A rig is up for Hollyfield & McFarland's No. 14 Giller, Section 10-16-15. Keene & Woolf Oil Co.'s No. 3 Murphy, Section 9-16-15, is being rigged up to drill deeper. It was formerly completed last July making 500 bbls. on the swab from sand at 2,421-42 feet.

### Location Staked

Location was staked by Lion Oil & Refining Co. for No. 5-C Bilyew, C NW SE, Section 8-16-15. Lion company's No. 10 Graves, Section 3-16-15, is to be produced with air. The well came in at 2,667-73 feet making 5,000,000 feet of gas and 75 bbls. of oil. Magnolia company's No. 2 Freeman, SE cor. NE SW, Section 7-16-16, is a derrick pattern. Magnolia company's No. 3 Childs, Section 8-16-16, has 150 feet of oil in the hole from sand at 2,586 to 2,604 feet and is waiting for a standard rig; a derrick is up for No. 4, SE cor. W half SE NE; surface casing was set at 231 feet at No. 4 Hessler, Section 8-16-16; No. 1 Murphy, Section 28-16-16, is being reamed to 2,708 feet. Murdock and associates' No. 4 Hays, Section 4-16-15, was junked and abandoned at 2,456 feet and the derrick skidded 30 feet east.

Murdock and associates' No. 1 Vestal, Section 17-16-15, is being deepened and is coring at 2,408 feet. The well was completed at 2,114 feet late in 1923 as Tidal Osage Oil Co.'s No. 1 and made 1,500 bbls. initial. Natural Gas & Fuel Corp.'s No. 7-B Lawton, 300 feet south and 660 feet west, NE cor. NE SW, Section 10-16-15, is a derrick. The lease was formerly reported as Mazda Oil Corp.'s Lawton lease. Pure Oil Co.'s No. 7 Bilyew, Section 8-16-15, is coring at 2,255 feet. S. L. Ramage's No. 1 Ezell, 330 feet north and west SE cor. SW NE, Section 24-16-15, is a rig. Simms Oil Co.'s No. 12 Cook, Section 16-16-15, is drilling at 2,069 feet.

A rig is up for Simms Oil Co.'s No. 1 H. O. Murphy, 150 feet north and west SE cor. Section 33-16-16. The plug at 2,667 feet is being drilled at Southern Crude Oil Purchasing Co.'s No. 10 Graves, Section 3-16-15. Southern company's No. 5-A Wells, Section 15-16-15, tested 2,000 feet of oil and 300 feet of salt water from sand at 2,585 to 2,954 feet. The hole is being plugged back to cut off the salt water intrusion. Standard Oil Co.'s No. 4 Reynolds, Section 6-18-15, is cleaning out and is 8 feet off bottom at 2,182 feet; No. 37 Hardy, Section 9-16-15, is drilling gumbo at 1,300 feet. Sunny Jim Oil Co.'s No. 3 Flenniken, Section 9-16-15, has 900 feet of fluid in the hole, 80 per cent salt water, from sand at 2,484-86 feet and is waiting for a standard rig. Six-inch was cemented at 2,352 feet at The Texas Company's No. 8 Calloway, Section 4-16-15; No. 8 Hays is being bailed to test sand at 2,355-65 feet.

### Lisbon Territory

In the Lisbon territory Gulf company's No. 1-A Slaughter, Section 20-17-16, is drilling at 975 feet. Humble company's No. 2 Snyder, Section 21-17-16, is drilling at 1,300 feet; No. 2 Goodwin, Section 20-17-16, has 500 feet of oil in the hole from sand at 2,144-64 feet and is waiting for a standard rig. Imperial Oil & Gas Gas Co.'s No. 2 Parker, Section 21-17-16, is waiting for cement to set at 2,076 feet; casing was cemented at 2,115 feet at No. 3 and No. 4, SE cor. SE NW, is a rig. Lion Oil & Refining Co.'s No. 17-A Mitchell, Section 17-17-16, tested 100,000 feet of gas with a show of oil from sand at 2,090 to 2,125 feet and the broken formation is to be shot.

Magnolia Petroleum Co.'s No. 5 Halsey, Section 20-17-16, has 200 feet of fluid in the hole from sand at 2,145-72 feet and is waiting for a standard rig; No. 6 is drilling at 100 feet. Ten-inch was set at 208 feet at Magnolia's No. 3 Slaughter, NE cor. NW SE, Section 17-17-16. Ohio Oil Co.'s No. 3 F. M. Stocks, SE cor. NW SW, Section 21-17-16, is drilling at 620 feet. Reynolds & Marrs' No. 4 Goodwin, Section 21-17-16, is drilling at 1,430 feet. Rovenger Oil Corp.'s No. 3 Dumas, Section 9-17-16, is drilling at 1,725 feet; No. 5 Graham, Section 16-17-16, had sand at 2,092 to 2,114 feet and is waiting for a standard rig. Southern company's No. 5-B Slaughter, Section 3-17-16, has 300 feet of oil in the hole from sand at 2,070 to 2,130 feet and is waiting for a standard rig; No. 6-B is a rig. On the Unity Petroleum Co.'s Snydor lease, Section 21-17-16, the plug is being drilled at 2,101 feet at No. 1; 6-inch was cemented at 2,118 feet at No. 2 and at 2,115 feet at No. 3 and at 2,080 feet at No. 4.

### Ouachita County

Most significant of the completions in Ouachita County last week was the failure of Phillips Petroleum Co.'s deep test, No. 1 Tate, SW SW NW, Section 9-14-17. It was junked at 3,132 feet and the casing pulled. Leading the producers was Standard Oil Co.'s No. 11-B Murphy, Section 28-15-15, which was completed at 2,610-26 feet making 150 bbls. naturally. The Texas Company's No. 8 Neeley, Section 27-15-16, was good for 85 bbls. on the pump in sand at 2,208-48 feet. Ohio Oil Co.'s No. 1 J. M. Curry, Section 32-15-19, was put on the beam at 2,118 feet and is good for 12 bbls. daily.

W. H. Copenhaven's No. 2 Berg, Section 13-15-17, tested a show of salt water and oil at 2,187 to 2,309 feet and is shut down for orders. Gulf company's No. 12 Goodwin, Section 32-15-15, is drilling at 2,160 feet; No. 22-A Umsted, Section 33-15-15, is drilling at 1,865 feet; No. 23-A Umsted is being delayed by a fishing job at 1,380 feet. Humble Oil & Refining Co.'s No. 10 Hildebrant, Section 28-15-15, has 450 feet of fluid in the hole from sand at 2,591-96 feet and is waiting for a standard rig. Humble company is arranging to deepen No. 13 Umsted, Section 5-16-15, which was completed in July, 1925, pumping 200 bbls. from 2,375 feet.

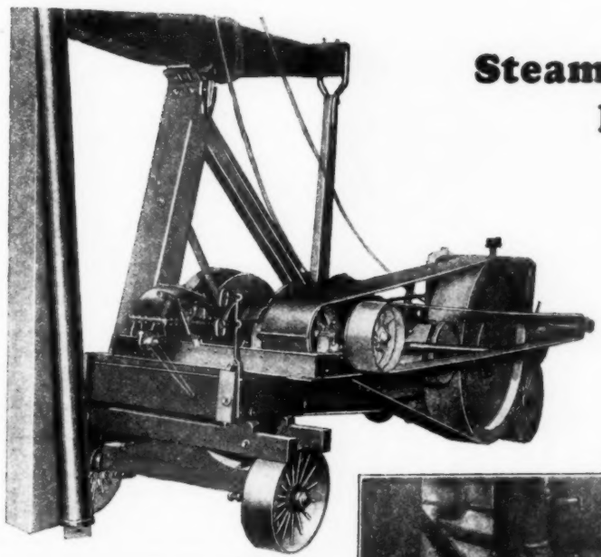
Lion Oil & Refining Co.'s No. 5 Hays, Section 4-16-15, is drilling at 2,200 feet. A. Meek's No. 3 Clawson, Section 35-15-17, is drilling at 2,075 feet and his No. 8 Hughes, Section 28-15-16, is a rig. Six-inch casing was cemented at 2,636 feet at Roxana corporation's No. 7 Berg, Section 28-15-15. Standard Oil Co.'s No. 7-B Umsted, Section 32-15-15, is being reamed at 2,580 feet, total depth of the hale 2,581 feet. A derrick pattern is on location for the Sun Oil Co.'s No. 7 Hardin, SW NW NE, Section 27-15-16. Sure Oil Co.'s No. 4 Snyder, Section 34-15-15, has 600 feet of oil in the hole from sand at 2,342-53 feet and a sand pump is being run. A. M. Sutton's No. 2 Schoolhouse, SW cor. NW NW, Section 28-15-16, is a rig. Vandiver and associates' No. 1 Yarbrough, Section 22-14-17, is drilling at 1,660 feet.

### Stephens District

In the Stephens district Magnolia Petroleum Co.'s No. 6 Watson, Section 31-15-19, is drilling lime at 1,700 feet. The plug at 2,127 feet is being drilled at Ohio Oil Co.'s No. 5 T. Hall, Section 31-15-19. A derrick is up for Ohio Oil Co.'s

(Continued on Page 127)

# Star Portable Drilling Machines



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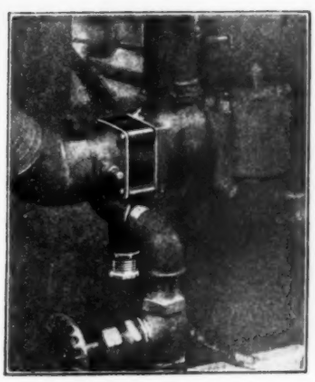

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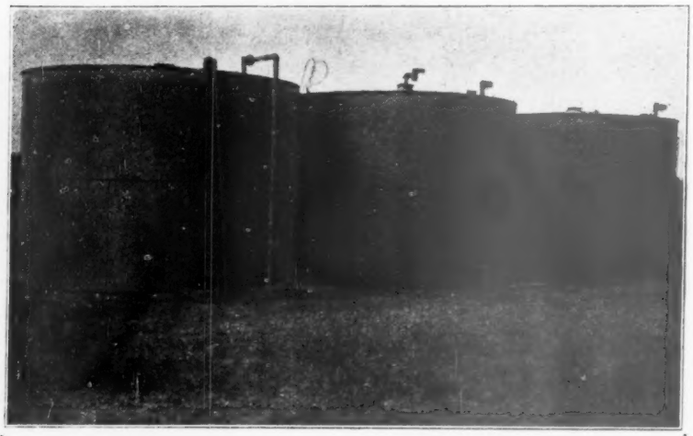

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MALONEYS are made of Keystone Copper Steel, the most durable, rust-resisting tank material known. Our patented crimp makes seams gas-tight without calking. Seams and joints are strongly reinforced with steel channels and strips. Cleaning-out plates are flush with bottoms. Valve and thief-hatch equipment is the best obtainable.

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Sizes: 12 to 3,000 Barrels

Packed in Steel-Bound Crates for Export

*Howell Aluminum "3 in 1" Vacuum, Pressure Valve and Thief Hatch—the BEST and LATEST Deck Equipment—POSITIVE Safety.*

MADE OF KEYSTONE COPPER STEEL

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MADE OF KEYSTONE COPPER STEEL

MALONEY

ALONE

## LAWSON MOST PROMISING LOUISIANA CENTER

(Continued from Page 43)

1 Wait, Section 4-18-16, which was formerly reported as dry and abandoned with the casing in the hole at 2,235 feet. The hole was reopened and a slight gas showing found. Tharpe and associates' No. 1 Peck, Section 22-18-13, is a rig. Wingfield and associates' No. 1 McGough, Section 22-17-13, is drilling at 2,350 feet.

**Bradley County**

Magnolia Petroleum Co.'s No. 1 Arkansas Timber Co., Section 33-15-11, is drilling at 2,707 feet. McMurray and associates' No. 1 Southern, Section 7-15-11, is drilling at 3,205 feet. Wingfield and associates' No. 1 Southern, Section 2-16-12, is coring at 2,665 feet. Fifteen and one-half inch casing was set at 81 feet at Phillips Petroleum Co.'s No. 1 Southern, Section 36-16-11.

**Calhoun County**

Delmar Oil Co.'s No. 1 Guidor, Section 16-11-14, is drilling at 2,431 feet.

**Jefferson County**

Decem Oil Co.'s No. 1 Hinsley, Section 7-3-10, is drilling rock at 2,550 feet.

**Lafayette County**

Arkansas Fuel Oil Co.'s No. 5 Allen, Section 18-19-24, is drilling chalk rock at 2,680 feet. The plug at 2,806 feet is being drilled at Kensaw Petroleum Co.'s No. 3, Section 3-20-24.

**Little River County**

Greason and associates' No. 1 Waldrop, Section 4-13-31, is shut down at 1,740 feet for orders. Grote and associates finally got a salt water flow at 2,932 feet killed and 5⅜-inch casing cemented at 2,940 feet. The test is waiting for a rotary rig.

**Miller County**

Gulf Refining Co.'s No. 1 Dorsey, Section 27-17-26, was dry and abandoned at 2,978 feet.

**LOUISIANA**

**Bienville Parish**

Woodley & Collins' No. 1 Thomas, Section 23-16-10, is drilling at 2,049 feet.

**Bossier Parish**

Doern and associates claim to have 4 feet of sand at 2,680-84 feet at No. 1 Bollinger, Section 9-22-11, and 6-inch is being set at 2,673 feet. A derrick pattern is on location for Woodley & Collins' No. 1 Roberson, Section 22-23-12.

**Caldwell Parish**

Southern Crude Oil Purchasing Co.'s No. 3 Caldwell, CNL NW NW, Section 13-13-5e, was dry and abandoned at 484 feet. T. R. Robbins' No. 1 Beasley, Section 10-11-4e, has been temporarily abandoned at 1,020 feet. Ten-inch was set at 41 feet, and Roxana Petroleum Corp.'s No. 1 Louisiana Central, Section 22-12-3e, is drilling at 516 feet. Southern company's No. 4 Caldwell, SE SE NW, Section 20-13-6e, is drilling at 518 feet.

**Claiborne Parish**

The core barrel is being run in Gilliland Oil Co. and Ramsey's No. 1-D Taylor, Section 14-23-8. The total depth of the hole is 4,558 feet and the formation is a sandy lime and shale. Shaw & Ruch's No. 1 King, Section 20-21-8, is drilling at 2,100 feet.

**DeSoto Parish**

Graize & Hintze's No. 1 Riggs, Section 27-14-13, is shut down at 1,380 feet. Dixie Oil Co.'s No. 1 Jenkins, Section 9-12-11, is drilling shells at 4,863 feet. Helm & Jarman's No. 1 Joyner, C NE SW, Section 28-11-12, is a rig. Magnolia Petroleum Co.'s No. 1 Bond, Section 27-12-11, is drilling hard lime at 4,120 feet. The plug at 2,690 feet at Snapp and associates' No. 1 Flores, Section 27-11-11, is being drilled. The Texas Company's No. 11-A Wemple, Section 2-12-12, is a derrick.

**East Carroll Parish**

T. A. Snell's No. 1 Garden Home Co., NE cor. Section 34-20-12e, is a rig.

**Franklin Parish**

R. W. Williams and associates' No. 1 Lemon, Section 17-14-8e, is a location.

**Grant Parish**

Four and one-half inch casing was cemented at 1,599 feet at Gulf Co.'s No. 2 Swope, Section 17-9-1e. H. L. Hunt's No. 1 Matthews, Section 15-9-1e, is waiting for cement to set at 1,549 feet. Keene & Woolfe Oil Co.'s No. 1 P. Rider, NE cor. NW NE, Section 16-9-1e, is a rig. Tunica Petroleum Co.'s No. 8 L. & A., Section 11-8-2w, is shut down at 251 feet for water. Tunica company's No. 13 L. & A., 300 feet south and west NE NE NW, Section 25-8-1e, is a rig.

**Jackson Parish**

Charles A. Ferguson's No. 1 Martin, Section 5-15-1e, is drilling at 2,760 feet. El Dorado Chief Oil Co.'s No. 1 Jones, Section 3-14-4w, is drilling shale at 1,700 feet. Grigsby & Co.'s No. 1 Adams, Section 22-17-4w, is being cored at 2,000 feet. A derrick pattern is on location for Louisiana Petroleum Corp.'s No. 2 Davis Theus, SW cor. SW SE, Section 12-16-3w.

**Lincoln Parish**

Arkansas Fuel Oil Co.'s No. 1 Lincoln Land Co., NW cor. Section 3-18-3w, was dry and abandoned at 3,380 feet. Buckley & Palmer's No. 1 Davis, Section 12-20-3w, is being washed to the bottom at 2,520 feet.

**Natchitoches Parish**

J. B. Greer's No. 1 L. L. L. L. L. Co., Section 6-5-7w, was dry and abandoned at 2,805 feet. Brothers and associates' No. 1 Cockfield, Section 78-7-5w, cored sandy shale at 1,852 feet. Davison and associates' No. 1 L. L. L. L. L. Co., Section 21-7-9, is drilling at 879 feet. Edwin Forrest's No. 2 Ayers, Section 3-13-7, is drilling at 1,900 feet. Gulf Refining Co.'s No. 1-A L. L. L. L. L. Co., Section 39-7-7, is drilling blue shale at 455 feet. Humble Oil & Refining Co.'s No. 1 Roge, Section 85-7-6, is drilling at 1,802 feet. McCormick and associates' No. 1 Russell, Section 41-10 7, is drilling at 1,635 feet. Ohio Oil Co.'s No. 1 L. L. L. L. L. Co., Section 20 8-8w, is drilling chadk rock at 2,010 feet. The chalk rock was topped at 1,975 feet. J. F. Palmer's No. 1 Edenborn, Section 4-11-6, has been temporarily abandoned at 2,015 feet and the rig moved. E. Self's No. 1 Fisher, Section 18-8-9w, cored sand at 1,480 feet. Weaver Brothers Lumber Co.'s No. 1 fee, Section 4-7-7, is drilling gummy shale at 2,350 feet.

**Red River Parish**

Six-inch casing was cemented at 1,180 feet at Alden Oil Co.'s No. 1 Powell, Section 13-11-10, and the bailer was lost when it was run in the hole to test sand at 1,190-97 feet.

**Richland Parish**

Louisiana Petroleum Co.'s No. 1 Hicks, Section 22-17-6e, was dry and abandoned at 1,610 feet. Gulf company cemented 15½-inch casing at 107 feet at No. 1 England, Section 32-17-6e. Gulf company's No. 1 Ches-Wyman, Section 23-18-8e, is drilling gumbo at 2,362 feet. Location was staked for Roxana Petroleum Corp.'s No. 1 Humble Brothers, 150 feet north and west SE cor. NW, Section 10-14-6. Roxana Petroleum Corp.'s No. 1 Tensas Delta, Section 3-14-5e, is drilling hard sand at 1,149 feet.

**Sabine Parish**

Operations are being delayed at L. M. Emlet's No. 5 H. L. Bowman, Section 9-7-12, while 800 feet of 2-inch drill stem is being fished from the bottom at 4,070 feet. Magnolia Petroleum Co.'s No. 1 L. L. L. L. L. Co., Section 11-6-11, is drilling sand and shale at 1,550 feet. A rig is being moved in for Reliance Drilling Co.'s No. 1 Wyatt Lumber Co., Section 23-5-12.

**Union Parish**

Arkansas Fuel Oil Co.'s No. 1 James Reeves, Section 14-20-1e, was abandoned in sandy shale at 4,500 feet without a test.

**Winn Parish**

Humble Oil & Refining Co.'s No. 1-A C. Edenborn, Section 26-9-3w, was dry and abandoned at 2,514 feet. Allen Drilling Co.'s No. 1 Sanders, Section 21-13-2w, is drilling at 1,352 feet. Dodge and associates' No. 12-A Edenborn, Section 28-9-3w, is a derrick. Ohio Oil Co.'s No. 2 Edenborn, Section 4-12-1w, is drilling at 2,335 feet.

**LaSalle Parish**

Tunica Petroleum Co.'s No. 11-A L. & A., Section 26-9-3e, was dry and abandoned at 2,214 feet. Tunica company's No. 12-A L. & A., Section 17-7-3e, is drilling at 948 feet.

# SPECIAL NAPHTHAS

Pat. Applied for

*Winkler & Koch Bubble Decks can be installed in existing tower shells and are made of cast iron throughout to resist corrosion.*

In the past the production of special naphthas has been a formidable task to the refiner.

With Winkler & Koch Bubble Towers the process becomes easy.

Below are given the actual results of everyday operation on a shell still crude battery producing these naphthas from Winkler & Koch towers:

| Stream No. | 1 *Light Naphtha* | No. 2 *Painter's Naphtha* | No. 3 *Kerosene* |
|---|---|---|---|
| Start | 135 | 298 | 424 |
| 5% | 186 | 308 | 434 |
| 10% | 196 | 312 | 446 |
| 20% | 204 | 320 | 454 |
| 30% | 212 | 326 | 460 |
| 40% | 216 | 332 | 468 |
| 50% | 220 | 338 | 476 |
| 60% | 224 | 346 | 488 |
| 70% | 230 | 354 | 500 |
| 80% | 238 | 364 | 520 |
| 90% | 252 | 378 | 542 |
| 95% | 268 | 390 | 566 |
| E.P. | 288 | 406 | 586 |
| % Rec. | 98.5 | 99.0 | 99.0 |

The most exacting test of a tower is the "gapping" of successive streams, i.e., to have the I.B.P. of one stream higher than the E.P. of the preceding stream. The above stream distillations illustrate clearly the ability of Winkler & Koch's equipment to do this in one operation without any rerunning whatsoever.

Nine out of ten refiners sell gas oil which contains from 10-30% kerosene. In times of high kerosene prices this represents a tremendous loss of profits. Winkler & Koch towers will secure the absolute maximum yields of any product from the crude in one operation. They function with the same high degree of efficiency on pipe stills, shell stills, rerun stills, cracking plants, or as natural gasoline absorbers.

Winkler & Koch solicit an opportunity to show what their equipment will do on any type of installation as regards increased yields and the increased profits resulting therefrom.

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WICHITA, KANSAS

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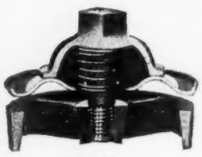
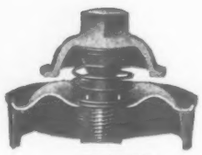


"Tomorrow's Valve Today"



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POWER—FUEL

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Philadelphia Montreal

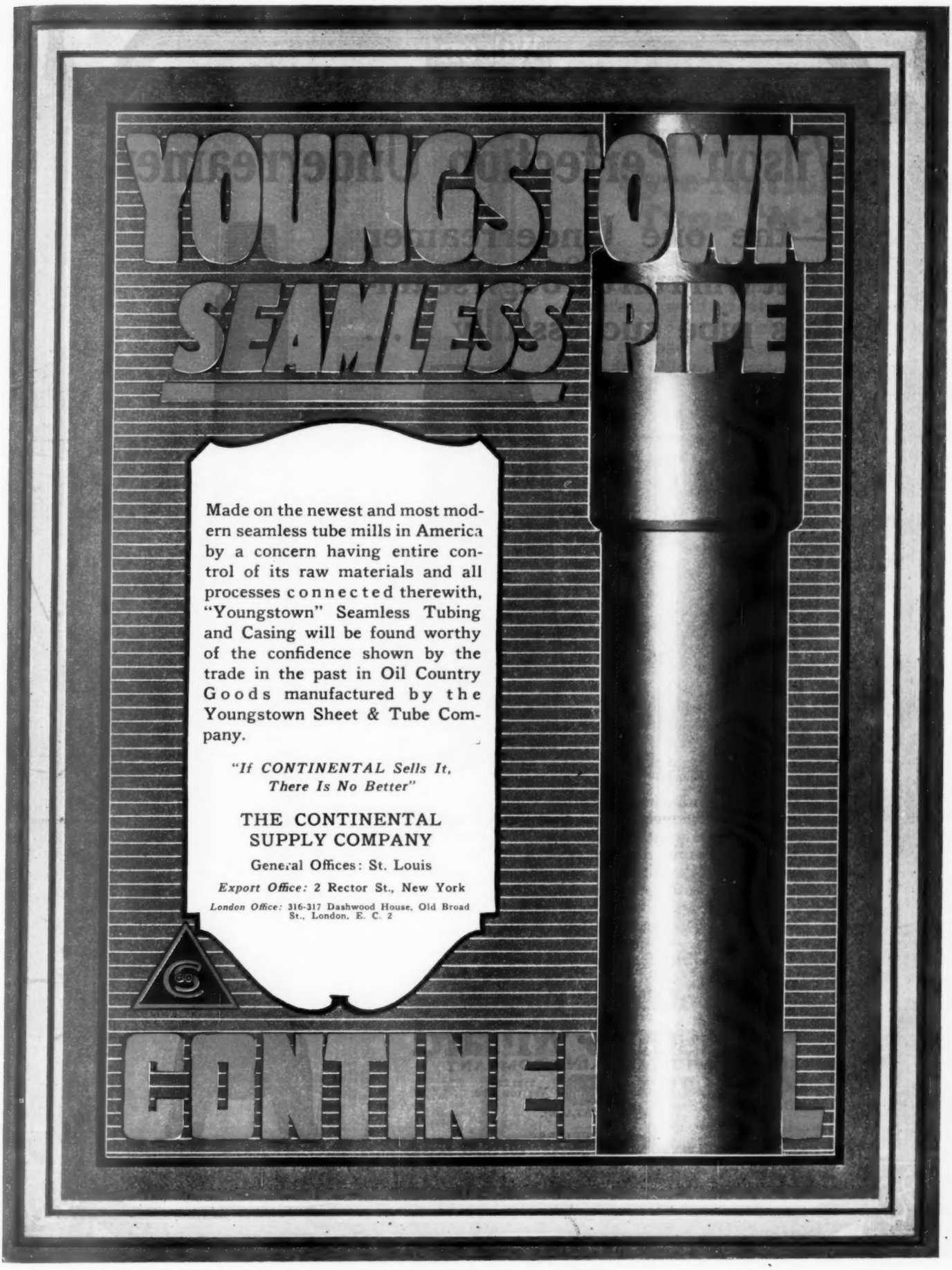
DURABLA

SHEET PACKING—ROD PACKING—GAUGE GLASS—
VALVE DISCS

## REPORT ON MONROE, LA., GAS FIELD

(Continued from Page 60)

| Well and Number— | Pressure, Pounds— Former | Present | Open Flow— Former | Present |
|---|---|---|---|---|
| Wetzel 1 | 870 | 840 | 2,465,321 | 2,465,321 |
| Central Company, Inc.: | | | | |
| Cole 1 | New well | 825 | New well | 7,020,000 |
| Feazel, W. C.: | | | | |
| Plemmons 1 | 515 | 448 | 8,494,735 | 5,326,000 |
| Plemmons 2 | 520 | 452 | 14,822,175 | 12,920,320 |
| Richland 1 | 700 | 680 | 9,810,991 | 9,810,991 |
| Fortuna Oil Co.: | | | | |
| Cole 1 | 825 | 800 | 4,832,000 | 4,500,000 |
| Morrison 1 | 810 | 809 | 3,648,380 | 3,525,120 |
| Flournoy, Morton & McGee: | | | | |
| F. M. & McGee 1 | 230 | 228 | 2,759,169 | 2,062,500 |
| F. M. & McGee 2 | 225 | 225 | 6,468,821 | 5,942,475 |
| F. M. & McGee 3 | 225 | 225 | 2,198,808 | 1,749,000 |
| F. M. & McGee 4 | 230 | 228 | 4,025,270 | 2,770,185 |
| Hosterman, A. D.: | | | | |
| Epstein 1 | 473 | 420 | 960,900 | 525,000 |
| Epstein 2 | 304 | 304 | 1,335,295 | 1,011,960 |
| Gibbs 1 | 253 | 270 | 3,650,750 | 3,459,500 |
| Collins 1 | 367 | 367 | 1,271,165 | 862,000 |
| Stubbs 2 | 220 | 220 | 1,564,790 | 1,507,832 |
| Huber, J. M., Co. of La.: | | | | |
| Farmer 1 | 220 | 210 | 2,496,000 | 1,656,000 |
| Farmer 2 | 220 | 210 | 524,000 | 452,000 |
| Fee 1 | 371 | 355 | 2,497,077 | 1,993,000 |
| Fee 2 | 247 | 235 | 8,000,587 | 2,645,040 |
| Fee 3 | 255 | 242 | 1,192,604 | 1,256,000 |
| Fee 4 | 247 | 230 | 197,600 | 100,000 |
| Fee 5 | New well | 475 | New well | 2,300,000 |
| Fee 6 | 395 | 370 | 3,287,304 | 2,620,320 |
| Mauser 1 | 242 | 220 | 4,106,927 | 2,408,000 |
| Mauser 2 | 305 | 290 | 1,057,582 | 1,000,000 |
| Hare 1 | 420 | 360 | 512,195 | 500,000 |
| Banks 1 | 680 | 395 | 2,052,000 | 1,404,000 |
| Banks 2 | 700 | 468 | 1,414,000 | 1,000,000 |
| Banks 3 | New well | 645 | New well | 2,916,000 |
| Edwards 1 | 830 | 775 | 6,088,050 | 4,001,241 |
| Edwards 2 | New well | 980 | New well | 2,698,085 |
| Hodge & Hunt: | | | | |
| Miller-Roberts 1 | New well | 915 | New well | 5,913,600 |
| Hatcher & Evans: | | | | |
| Hatcher & Evans 1 | 850 | 830 | 5,693,455 | 6,114,130 |
| Hatcher & Evans 2 | 863 | 857 | 11,421,375 | 8,814,850 |
| Hatcher & Evans 4 | New well | 815 | New well | 6,714,290 |
| Hunter, S. D., Trustee: | | | | |
| Allison 1 | 785 | 775 | 2,324,758 | 2,092,320 |
| Allison 2 | 810 | 795 | 3,462,569 | 3,938,720 |
| Allison 3 | 755 | 735 | 5,577,600 | 6,048,000 |
| Allison 4 | 615 | 600 | 3,622,064 | 3,592,640 |
| Allison 5 | 657 | 640 | 7,531,488 | 8,350,815 |
| Allison 6 | 625 | 605 | 7,672,426 | 6,618,150 |
| Sandidge 2 | 840 | 847 | 9,701,944 | 6,660,000 |
| D'Arbonne 1 | New well | 965 | New well | 2,626,000 |
| Imperial Oil & Gas Products Co.: | | | | |
| Stubbs 1 | 870 | 860 | 4,399,282 | 4,469,500 |
| Cole 1 | 875 | 875 | 6,149,225 | 5,626,500 |
| Jordan, G. E., Trustee: | | | | |
| Rea-Green 1 | New well | 860 | New well | 9,159,200 |
| Fudicar 1 | New well | 1,010 | New well | 1,104,000 |
| Ouachita Land 1 | New well | 940 | New well | 3,150,840 |
| Miller-Roberts 1 | New well | 940 | New well | 9,895,625 |
| James, T. L. (Ruston Drilling Co.): | | | | |
| Talton 1 | 1,000 | 1,000 | 2,400,000 | 3,432,200 |
| Miller 1 | 1,000 | 940 | 14,839,680 | 14,353,920 |
| Ford 1 | 950 | 940 | 9,227,460 | 6,132,000 |
| Parks 2 | New well | 912 | New well | 7,476,000 |
| La Del Oil Properties: | | | | |
| Dow Davis 1 | 510 | 465 | 11,851,293 | 13,224,960 |
| Feazel 1 | 525 | 475 | 18,531,933 | 22,189,920 |
| Fee 1 | 330 | 305 | 5,034,271 | 4,932,000 |
| Fee 2 | 365 | 355 | 4,615,722 | 2,179,500 |
| Fee 3 | 433 | 400 | 4,985,119 | 4,414,940 |
| Fee 4 | 380 | 345 | 6,250,799 | 7,411,026 |
| Fee 5 | 360 | 310 | 4,160,741 | 4,130,588 |
| Fee 6 | 361 | 275 | 3,750,810 | 2,604,066 |
| Fee 7 | 380 | 340 | 2,034,787 | 2,092,320 |
| Fee 8 | 305 | 270 | 20,395,683 | 16,020,000 |
| Fee 9 | 350 | 270 | 18,710,057 | 12,066,900 |
| Fee 11 | 320 | 280 | 5,459,985 | 3,938,720 |
| Fee 12 | 335 | 317 | 917,808 | 848,000 |
| Fee 13 | 395 | 330 | 14,539,543 | 12,528,000 |
| Fee 14 | 450 | 405 | 6,017,095 | 5,075,840 |
| Fee 15 | 525 | 485 | 1,393,102 | 1,232,000 |
| Fee 16 | 500 | 450 | 6,257,027 | 6,436,668 |
| Fee 17 | 645 | 585 | 33,620,239 | 31,111,380 |
| Fee 18 | 317 | 300 | 2,113,936 | 1,632,000 |
| Fee 19 | 532 | 485 | 3,686,780 | 3,279,520 |
| Fee 20 | 300 | 290 | 4,576,316 | 4,416,949 |
| Fee 21 | 518 | 457 | 9,958,192 | 8,739,225 |
| Fee 22 | 355 | 320 | 5,581,553 | 6,468,000 |
| Fee 23 | 600 | 545 | 5,508,433 | 5,769,120 |
| Fee 24 | 680 | 620 | 12,238,795 | 12,377,299 |
| Fee 25 | 533 | 605 | 2,101,729 | 2,416,000 |
| Fee 26 | 306 | 290 | 8,192,916 | 7,392,000 |
| Fee 27 | 362 | 315 | 2,990,092 | 2,446,440 |
| Fee 28 | 410 | 385 | 1,655,618 | 1,728,000 |
| Fee 29 | 310 | 280 | 2,938,851 | 2,304,000 |
| Fee 30 | 443 | 380 | 10,523,242 | 9,621,440 |
| Fee 31 | 328 | 315 | 6,174,666 | 6,081,600 |
| No. 32 | 420 | 370 | 21,611,338 | 19,902,121 |
| Fee 33 | New well | 542 | New well | 745,180 |
| W. W. White 1 | 320 | 295 | 13,063,034 | 13,819,080 |
| W. W. White 2 | 360 | 320 | 3,025,728 | 2,867,520 |
| W. W. White 3 | 325 | 295 | 7,423,520 | 8,611,360 |
| Glazier 1 | 890 | 853 | 2,208,000 | 2,718,960 |
| Louisiana Power Co.: | | | | |
| Thompson 1 | 1,033 | 1,010 | 6,126,000 | 5,184,000 |
| Grayling 1 | 1,020 | 990 | 14,060,000 | 14,040,000 |
| Hill 1 | New well | 1,000 | New well | 2,677,860 |
| Louisiana Gas Products Corp.: | | | | |
| Dew Drop 1 | 580 | 537 | 5,992,963 | 5,751,900 |
| Dew Drop 2 | 585 | 537 | 19,251,109 | 16,607,910 |
| Dew Drop 3 | 645 | 547 | 6,724,696 | 5,962,540 |
| Dew Drop 4 | 630 | 580 | 18,722,706 | 16,724,910 |
| Magnolia Carbon Co.: | | | | |
| Bowles fee 1 | 600 | 670 | 14,133,014 | 15,613,760 |
| Bowles fee 2 | 635 | 615 | 8,063,380 | 9,501,600 |
| Maury Drilling Co.: | | | | |
| McEwen 1 | 810 | 810 | 12,282,685 | 12,282,000 |
| McEwen 2 | 840 | 840 | 7,357,582 | 7,357,582 |
| McEwen 3 | New well | 840 | New well | 7,704,000 |
| Frierson 1 | 880 | 880 | 7,892,000 | 7,892,000 |
| Mohawk Oil Co.: | | | | |
| Marlott 1 | 758 | 758 | 1,868,470 | 1,972,000 |
| McKenzie, C. E.: | | | | |
| McKenzie 1 | New well | 620 | New well | 12,348,000 |
| Monroe (La.) Carbon Co.: | | | | |
| Fee 1 | 225 | Repairing | 2,446,630 | Repairing |
| Natural Gas Producing Co. of La.: | | | | |
| C. & A. Cox 1 | 460 | 450 | 8,461,972 | 6,493,326 |
| G. H. Cox 1 | 525 | 500 | 10,819,044 | 11,634,840 |
| Crossett 1 | 985 | 865 | 49,494,949 | 49,494,949 |
| Crossett 6 | 990 | 1,000 | 6,985,440 | 7,946,400 |
| Crossett 7 | 990 | 995 | 4,933,040 | 5,661,600 |
| Crossett 9 | 990 | 995 | 2,686,240 | 3,213,600 |
| Crossett 10 | 870 | 875 | 20,279,202 | 20,279,202 |
| Crossett 11 | 970 | 960 | 3,462,162 | 3,571,329 |
| Crossett 12 | 985 | 1,000 | 7,514,128 | 7,207,200 |
| Crossett 13 | 998 | 980 | 8,957,113 | 9,233,565 |
| Crossett 14 | 985 | 995 | 10,584,676 | 10,214,605 |
| Crossett 15 | 980 | 985 | 22,144,134 | 22,144,134 |
| Crossett 17 | New well | 910 | New well | 2,224,620 |
| Crossett 19 | New well | 1,025 | New well | 3,372,120 |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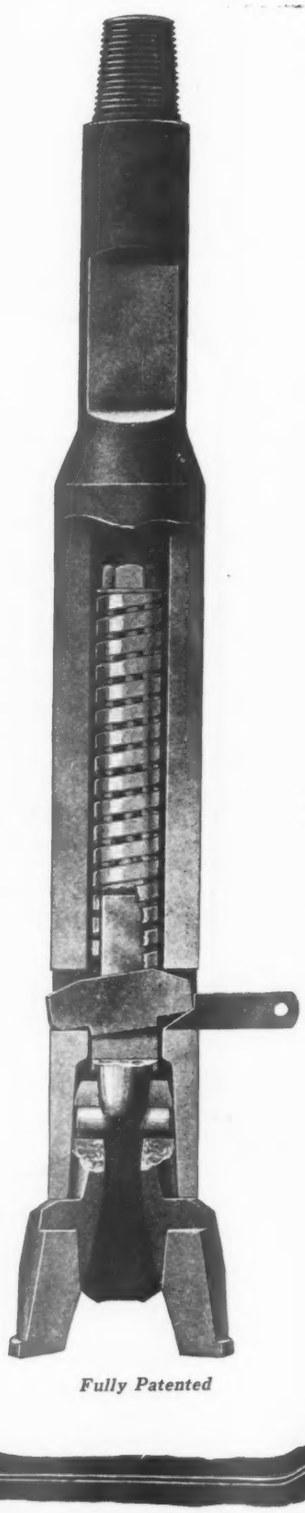

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These huge and powerful cutters completely collapse underneath the body when running in or out of the pipe and consequently cannot snag, wedge and freeze. This Underreamer does not require pulling out of the hole to reset the cutters. They expand at the bottom of the pipe automatically and collapse *fully* when being pulled up. It is the one perfect Underreamer, especially where seamless pipe is used.

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| Well and Number— | Pressure, Pounds Former | Pressure, Pounds Present | Open Flow Former | Open Flow Present |
|---|---|---|---|---|
| Grayling 1 | 550 | Repairing | 1,808,000 | Repairing |
| Grayling 2 | 940 | Repairing | 9,219,531 | Repairing |
| Grayling 3 | 1,000 | 1,007 | 3,434,112 | 5,232,660 |
| Madison 1 | 623 | 585 | 3,328,977 | 2,937,457 |
| Page 1 | 590 | 570 | 2,546,190 | 2,041,360 |
| Perry 1 | 800 | 800 | 3,341,009 | 3,361,920 |
| Perry 2 | 865 | 810 | 3,206,132 | 3,076,599 |
| Perry 3 | 595 | Repairing | 849,077 | Repairing |
| Pickett 1 | 583 | 550 | 1,723,299 | 1,395,930 |
| Plemmons 1 | 517 | 460 | 15,512,882 | 13,384,660 |
| Rogers 1 | 535 | 490 | 8,167,705 | 6,225,397 |
| Sandidge 1 | 890 | 900 | 24,379,379 | 24,379,379 |
| Snyder 1 | 340 | 305 | 3,325,719 | 1,786,190 |
| Snyder 2 | 360 | 320 | 9,583,776 | 7,879,200 |
| Snyder 3 | 305 | 275 | 16,436,068 | 15,613,760 |
| Snyder 4 | 305 | 280 | 5,513,681 | 4,792,590 |
| Tensas Delta 1 | 980 | 975 | 3,120,900 | 3,526,720 |
| Tensas Delta 2 | 940 | 990 | 5,022,391 | 6,020,511 |
| Tensas Delta 3 | 972 | 945 | 10,739,197 | 10,734,240 |
| Tensas Delta 4 | 990 | 980 | 4,861,244 | 3,633,170 |
| Tensas Delta 5 | 998 | 925 | 4,127,987 | 4,185,920 |
| Tensas Delta 6 | 1,000 | 975 | 12,320,340 | 12,270,294 |
| Watson 1 | 857 | 770 | 3,993,471 | 3,938,720 |
| Williams 1 | 645 | 645 | 5,116,522 | 4,812,160 |
| White 1 | 342 | 305 | 16,679,018 | 12,961,435 |
| Chambers 1 | 785 | 780 | 5,734,526 | 7,312,872 |
| Johnson 1 | 802 | 797 | 7,096,213 | 8,097,760 |
| School Board 1 | 1,030 | 940 | 19,368,000 | 16,861,020 |
| Jenny 1 | 1,008 | 1,000 | 16,524,000 | 15,790,913 |
| Scott 1 | 1,000 | 1,000 | 21,456,000 | 20,769,375 |
| O'Brien, R. J.: | | | | |
| Rea-Green 1 | New well | 893 | New well | 1,908,000 |
| Oil Field Exploration Co.: | | | | |
| Betz 1 | 865 | 860 | 1,905,022 | 1,900,000 |
| Pratt 1 | 455 | 455 | 816,000 | 816,000 |
| Watson 1 | 705 | 678 | 13,068,750 | 12,110,650 |
| Collins 1 | 677 | 650 | 2,577,597 | 2,117,365 |
| Ouachita Natural Gas & Oil Co.: | | | | |
| Smith 2 | 865 | 860 | 31,462,788 | 30,533,140 |
| Smith 4 | 850 | 855 | 10,227,486 | 10,426,080 |
| Smith 5 | 795 | 775 | 24,605,248 | 24,345,320 |
| Lieber 1 | 835 | 840 | 20,540,645 | 16,616,930 |
| Lieber 2 | 870 | 860 | 13,381,705 | 15,104,000 |
| Lieber 3 | 850 | 840 | 13,906,541 | 15,830,020 |
| Liston-Weddle 1 | 835 | 845 | 14,080,779 | 16,576,640 |
| Liston Weddle 2 | 845 | 855 | 16,082,861 | 15,878,080 |
| Phillips 1 | 855 | 865 | 2,024,946 | 2,112,000 |
| Trezevant 2 | 865 | 860 | 10,467,081 | 13,511,680 |
| Trezevant 3 | 860 | 865 | 21,028,670 | 28,445,440 |
| Walker 1 | 235 | 230 | 485,663 | 445,500 |
| Walker 2 | 220 | 215 | 2,208,000 | 2,974,125 |
| Walker 3 | 255 | 230 | 748,000 | 594,000 |
| Walker 4 | 220 | 210 | 7,140,000 | 7,276,500 |
| Cole 1 | 855 | 860 | 13,935,537 | 13,391,070 |
| Palmer Corp.: | | | | |
| Cole 1 | 870 | 870 | 3,858,208 | 3,858,208 |
| Cole 2 | 880 | 880 | 8,141,455 | 8,141,455 |
| Gladney 1 | 245 | 230 | 2,357,267 | 3,562,522 |
| Morgan 1 | 227 | 232 | 2,700,486 | 6,552,000 |
| Morgan 2 | 303 | 285 | 4,738,449 | 3,361,920 |
| Hare 1 | 227 | 215 | 974,029 | 912,000 |
| Spades 1 | 210 | 205 | 13,898,764 | 12,597,760 |
| Spades 2 | 218 | 205 | 8,901,978 | 12,006,400 |
| Walker 1 | 240 | 212 | 16,834,104 | 15,878,080 |
| Lieber 1 | 335 | 280 | 2,115,768 | 1,776,000 |
| Lieber 2 | 245 | 265 | 391,999 | 436,000 |
| Lieber 3 | 410 | 360 | 543,250 | 400,000 |
| Kate Cole 1 | 780 | 780 | 8,514,770 | 8,514,770 |
| Millsaps 1 | New well | 640 | New well | 41,600,000 |
| Millsaps 2 | New well | 640 | New well | 8,964,890 |
| Potts 1 | 612 | 534 | 28,141,016 | 24,769,500 |
| Potts 2 | 625 | 547 | 29,627,295 | 27,121,500 |
| Fee 1 | New well | 700 | New well | 5,616,000 |
| Fee 2 | New well | 700 | New well | 3,432,200 |
| Fee 3 | New well | 655 | New well | 3,592,000 |
| Central 1 | New well | 592 | New well | 26,369,530 |
| Peerless Carbon Co.: | | | | |
| Moore 1 | 820 | 825 | 9,995,700 | 9,515,000 |
| Moore 2 | 840 | 837 | 28,787,923 | 30,378,640 |
| Fee 1 | 225 | 213 | 1,840,000 | 1,872,000 |
| Fee 2 | 210 | 215 | 3,289,372 | 3,308,504 |
| Pioneer Gas Co.: | | | | |
| Nolan 1 | New well | 930 | New well | 2,446,400 |
| Filhiol 1 | New well | 975 | New well | 3,161,070 |
| Potts, John J., Trustee: | | | | |
| Potts 1 | 252 | 255 | 2,443,780 | 2,112,000 |
| Potts 2 | 260 | 245 | 1,633,180 | 1,248,000 |
| Southern Carbon Co.: | | | | |
| Cole 1 | 790 | 680 | 12,221,848 | 11,397,120 |
| Edelen 1 | 221 | 220 | 1,153,032 | 1,136,000 |
| Edelen 2 | 266 | 260 | 912,000 | 1,200,000 |
| Edelen 3 | 219 | 220 | 1,557,321 | 1,584,000 |
| Fairbanks 1 | 760 | 750 | 1,968,755 | 1,728,000 |
| Fairbanks 2 | 890 | 855 | 3,894,362 | 3,938,720 |
| Fairbanks 3 | 865 | 855 | 12,048,293 | 11,908,894 |
| Fairbanks 5 | 850 | 830 | 12,846,991 | 13,224,960 |
| Fairbanks 6 | 865 | 840 | 13,590,183 | 12,224,960 |
| Fairbanks 7 | 885 | 840 | 19,734,455 | 19,200,000 |
| Fee 1 | 680 | 680 | 4,244,039 | 4,762,720 |
| Fee 2 | 680 | 640 | 4,325,786 | 4,562,280 |
| Fee 3 | 202 | 210 | 3,151,192 | 3,361,920 |
| Fee 4 | 680 | 630 | 4,208,117 | 3,609,120 |
| Fee 5 | 620 | 535 | 13,143,653 | 10,511,680 |
| Fee 6 | 680 | 720 | 3,478,323 | 3,609,120 |
| Fee 7 | 518 | 460 | 1,356,206 | 1,104,000 |
| Fee 8 | 680 | 650 | 9,097,462 | 8,388,800 |
| Fee 9 | 205 | 208 | 6,477,997 | 7,324,800 |
| Fee 10 | 339 | 340 | 385,387 | 400,000 |
| Fee 11 | 240 | 240 | 3,123,494 | 3,048,800 |
| Fee 12 | 360 | 339 | 2,674,364 | 1,552,000 |
| Fee 13 | 540 | 470 | 1,025,080 | 800,000 |
| Fee 14 | 225 | 225 | 907,684 | 1,040,000 |
| Fee 15 | 280 | 270 | 6,036,778 | 7,324,800 |
| Fee 16 | 260 | 266 | 862,812 | 848,000 |
| Fee 17 | 204 | 208 | 5,320,273 | 6,132,000 |
| Fee 18 | 220 | 220 | 4,187,560 | 4,301,280 |
| Fee 19 | 206 | 208 | 3,266,744 | 3,361,920 |
| Fee 21 | 215 | 219 | 11,924,495 | 11,397,120 |
| Fee 22 | 215 | 214 | 3,081,035 | 3,213,600 |
| Fee 23 | 262 | 260 | 2,410,256 | 2,400,000 |
| Fee 25 | 439 | 405 | 744,544 | 544,000 |
| Fee 26 | 630 | 540 | 5,985,997 | 5,075,840 |
| Fee 27 | 620 | 520 | 14,591,364 | 13,224,960 |
| Fee 28 | 205 | 209 | 5,985,997 | 5,661,600 |
| Fee 29 | 270 | 267 | 786,852 | 760,000 |
| Fee 30 | 227 | 230 | 8,142,038 | 8,679,840 |
| Fee 31 | 270 | 270 | 7,865,332 | 8,388,800 |
| Fee 33 | 225 | 228 | 1,665,684 | 1,656,000 |
| Fee 34 | 300 | 300 | 15,721,273 | 15,915,840 |
| Fee 35 | 630 | 570 | 1,254,396 | 1,344,000 |
| Fee 36 | 229 | 215 | 1,919,056 | 1,780,000 |
| Fee 37 | 320 | 310 | 1,426,277 | 1,384,000 |
| Fee 38 | 264 | 345 | 1,613,777 | 2,180,000 |
| Fee 39 | 262 | 255 | 677,221 | 672,000 |
| Fee 40 | 630 | 540 | 22,389,471 | 23,578,240 |
| Fee 41 | 620 | 520 | 17,431,870 | 17,199,680 |
| Fee 42 | 630 | 580 | 3,450,174 | 3,380,000 |
| Fee 44 | 490 | 470 | 1,020,670 | 956,000 |
| Fee 45 | 690 | 645 | 8,260,777 | 9,210,560 |
| Fee 46 | 419 | 405 | 3,687,192 | 3,144,000 |
| Fee 47 | New well | 860 | New well | 1,190,160 |
| No. 48 | New well | 830 | New well | 4,126,000 |
| No. 49 | New well | 620 | New well | 15,696,000 |
| Fisher 1 | 840 | 825 | 4,416,640 | 4,861,600 |
| Fisher 2 | 840 | 800 | 2,208,000 | 2,400,000 |
| Fisher 3 | 808 | 770 | 936,297 | 780,000 |
| Kerr 1 | 605 | 542 | 5,762,525 | 5,075,840 |
| Kerr 2 | 620 | 580 | 18,305,000 | 20,840,000 |
| Kerr 3 | 630 | 480 | 1,120,090 | 1,180,000 |
| Mangham 1 | 705 | 655 | 386,477 | 464,000 |


# A compact, powerful rig lighting unit.... Pyle-National Type "M-2"

Operators have been looking for just this kind of a rig lighting unit, a turbo-generator with greater capacity, built to stand up in the field without attention, compact and sturdy in construction, and able to operate on widely varying steam pressure.

Type "M-2," big brother to the thousands of Pyle-National turbo-generators already in service, meets *all* the conditions of right lighting today. Capacity 2½ kw.; strong enough for rough service, but without any excess weight; completely enclosed and weatherproof; operates at full load on any steam pressures from 200 lbs. to 80 lbs., with regulation within 3 volts.

Send for the detailed description, or better, write for a demonstration. No obligation either way.

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*Export Department*
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OGJ9-30Gray

# For Unusual Conditions

The unusual conditions encountered in the oil fields and around oil refineries call for the use of unusual paint.

## Valdura Asphalt Paint

is unusual paint. It is the highest type of asphalt paint made. It is a paint you can rely upon to give satisfactory service under the most trying and difficult paint conditions. VALDURA's base is genuine 99.5% pure Gilsonite *natural* Asphalt. It is absolutely waterproof, weatherproof, acid and alkali resisting, and will actually preserve any surface covered.

You don't have to paint so often when you use VALDURA. It protects the surface painted, many times longer than ordinary paint—in addition, has twice the covering capacity.

For your particularly hard places, try VALDURA. You will be surprised and pleased with the service it gives.

---

## American Asphalt Paint Company

**844 Rush Street** **Chicago**

DISTRIBUTED BY
**THE NATIONAL SUPPLY COMPANIES**


| Well and Number— | Pressure, Pounds— Former | Present | Open Flow— Former | Present |
|---|---|---|---|---|
| Richland 1 | 890 | 870 | 5,927,978 | 5,846,460 |
| Richland 2 | 810 | 780 | 6,741,898 | 7,901,346 |
| Richland 3 | 880 | 850 | 2,949,920 | 2,849,327 |
| Richland 4 | 700 | 700 | 8,210,608 | 8,210,604 |
| Spades 1 | 850 | 850 | 4,244,039 | 2,208,000 |
| Spyker 1 | 825 | 810 | 3,962,707 | 3,526,720 |
| Spyker 2 | 805 | 812 | 4,115,028 | 4,548,480 |
| Spyker 3 | 605 | 460 | 13,067,957 | 9,396,000 |
| Spyker 4 | 610 | 570 | 9,643,592 | 8,183,360 |
| Spyker 6 | 590 | 530 | 7,399,182 | 6,384,000 |
| Spyker 7 | 660 | 635 | 7,966,340 | 7,946,400 |
| Spyker 8 | 820 | 810 | 2,003,563 | 2,028,000 |
| Spyker 9 | 800 | 865 | 1,854,160 | 2,456,000 |
| Spyker 10 | 868 | 860 | 3,916,187 | 3,364,000 |
| Spyker 11 | 590 | 550 | 3,173,652 | 1,344,000 |
| Spyker 12 | 600 | 580 | 5,307,750 | 5,796,000 |
| Southern Carbon Co. (formerly The Texas Company): | | | | |
| La Del 1 | 682 | 612 | 12,201,080 | 8,679,840 |
| La Del 2 | 710 | 648 | 7,372,158 | 6,132,000 |
| La Del 3 | 710 | 650 | 14,843,399 | 11,916,800 |
| Gibbs 1 | 240 | 235 | 998,400 | 780,000 |
| Gibbs 2 | 285 | 255 | 2,704,685 | 2,867,520 |
| Gibbs 3 | 315 | 241 | 4,883,025 | 4,028,000 |
| Gibbs 4 | 290 | 283 | 1,286,400 | 1,728,000 |
| Gibbs 5 | 280 | 270 | 2,131,846 | 1,520,000 |
| Grayling 1 | 1,030 | 1,010 | 35,079,680 | 34,398,432 |
| Grayling B-1 | 1,000 | 990 | 14,371,286 | 14,000,000 |
| Grayling B-2 | New well | 1,020 | New well | 17,136,000 |
| Grayling 3 | 1,000 | 980 | 13,679,400 | 13,450,000 |
| Grayling 4 | New well | 1,000 | New well | 18,823,000 |
| Grayling 5 | New well | 1,020 | New well | 22,536,000 |
| McEnery 1 | 620 | 620 | 1,417,133 | 1,332,000 |
| Miles 1 | 970 | 950 | 4,393,983 | 7,022,400 |
| Phillips 1 | 905 | 890 | 9,850,309 | 9,850,309 |
| Phillips 2 | 882 | 880 | 6,566,873 | 8,388,800 |
| O'Neal 1 | 205 | 210 | 6,707,597 | 7,106,400 |
| O'Neal 2 | 160 | 160 | 1,600,396 | 1,600,396 |
| O'Neal 3 | 210 | 220 | 565,088 | 616,000 |
| Wuichet 1 | 257 | 273 | 1,470,828 | 1,104,000 |
| Jenny 1 | 960 | 995 | 10,293,611 | 10,668,812 |
| Tensas Delta 1 | 890 | 885 | 8,522,544 | 9,953,760 |
| Tensas Delta 2 | 1,033 | 1,030 | 15,273,735 | 13,224,960 |
| Atkins 1 | 420 | 310 | 2,371,752 | 1,750,566 |
| Griffin 1 | 875 | 862 | 23,423,000 | 23,241,180 |
| Stovall, Fred, Trustee: | | | | |
| Stovall 1 | 820 | 795 | 19,484,752 | 17,199,680 |
| Stovall 2 | 660 | 640 | 18,968,738 | 19,800,000 |
| Stovall 3 | 665 | 635 | 11,194,350 | 9,039,000 |
| Smith, D. Y.: | | | | |
| White 1 | 358 | 358 | 2,456,252 | 2,367,000 |
| Texas-La. Producing & Carbon Co.: | | | | |
| Fee 1 | 339 | 297 | 13,217,661 | 5,075,840 |
| Fee 2 | 325 | 280 | 5,553,487 | 2,949,920 |
| Fee 3 | 314 | 270 | 7,917,235 | 4,482,560 |
| Scott 1 | 800 | 360 | 372,000 | 280,000 |
| Thrift Oil & Gas Co.: | | | | |
| Thrift 1 | 800 | 850 | 6,423,227 | 7,280,000 |
| Thrift 2 | 750 | 760 | 4,074,527 | 4,231,300 |
| Smith-Russell 1 | 825 | 870 | 15,766,259 | 17,199,680 |
| Transcontinental Oil Co.: | | | | |
| Spencer 1 | 1,020 | 1,020 | 4,850,670 | 4,850,670 |
| Union Gas Producing Corp.: | | | | |
| Doughtie 1 | 207 | 205 | 1,925,393 | 1,472,000 |
| Doughtie 2 | 210 | 210 | 3,668,085 | 3,296,000 |
| Doughtie 3 | 218 | 210 | 3,695,011 | 3,236,520 |
| Tensas Delta 1 | 435 | 370 | 7,786,541 | 5,720,311 |
| Lewis 1 | 469 | 400 | 1,584,000 | 1,584,000 |
| Union Power Co. (Interstate Natural Gas Co., Inc.): | | | | |
| U. S. M. B-3002 | 968 | 920 | 12,443,437 | 11,916,800 |
| U. S. M. B-3005 | 1,015 | 1,015 | 2,686,743 | 2,686,743 |
| U. S. M. B-3006 | 630 | 620 | 780,000 | 780,000 |
| U. S. M. A- 505 | 990 | 960 | 12,664,368 | 12,280,511 |
| U. S. M. A- 506 | 990 | 937 | 16,635,168 | 12,930,320 |
| U. S. M. A- 507 | 990 | 980 | 14,611,482 | 14,463,760 |
| U. S. M. A- 508 | 1,000 | 890 | 11,340,434 | 10,092,986 |
| U. S. M. A- 509 | 990 | 960 | 21,423,600 | 20,774,251 |
| U. S. M. A- 510 | 980 | 960 | 12,345,805 | 12,093,827 |
| U. S. M. A- 512 | 1,000 | 970 | 23,920,050 | 23,202,448 |
| U. S. M. A- 515 | 960 | 920 | 2,808,994 | 2,496,000 |
| United Carbon Co.: | | | | |
| Fee 1, Central | 375 | 335 | 3,444,633 | 1,836,000 |
| Lieber 1, Central | 344 | 300 | 7,181,701 | 6,756,750 |
| Lieber 2, Central | 354 | 312 | 2,626,858 | 1,782,000 |
| Fee 1, Cosmos | 650 | 550 | 23,123,945 | 22,858,000 |
| Nelson 1, Cosmos | 935 | 925 | 5,510,973 | 5,510,973 |
| Nelson 2, Cosmos | 860 | 780 | 3,937,000 | 3,314,025 |
| Nelson 3, Cosmos | 790 | 740 | 2,401,000 | 2,770,185 |
| Nelson 4, Cosmos | 719 | 660 | 18,549,012 | 17,094,660 |
| Nelson 5, Cosmos | 775 | 728 | 5,079,918 | 4,061,805 |
| Nelson 6, Cosmos | 690 | 650 | 10,260,000 | 8,604,000 |
| Hancock 1, Cosmos | 290 | 282 | 12,178,254 | 10,648,640 |
| Hancock 2, Cosmos | 305 | 296 | 1,743,404 | 1,387,870 |
| Fee 1, Easterling | 247 | 248 | 901,056 | 848,000 |
| Crossett 1, Humphries | 440 | 430 | 1,855,953 | 1,567,500 |
| Freeland-Odom 1, Humphries | 940 | 940 | 1,552,000 | 1,552,000 |
| Hiller 1, Humphries | 900 | 870 | 1,344,000 | 1,254,000 |
| Snyder 1, Humphries | 920 | 880 | 1,372,814 | 1,782,000 |
| Spyker 1, Humphries | 590 | 590 | 19,291,994 | 21,840,000 |
| Stevenson 1, Humphries | 960 | 960 | 20,860,961 | 20,860,961 |
| Tisdale 1, Humphries | 870 | 880 | 2,132,934 | 2,046,000 |
| Eubanks 1, Montgomery | 583 | 583 | 1,455,004 | 1,455,004 |
| Carter 1, Montgomery | 665 | 565 | 29,452,335 | 27,044,710 |
| Collins 1, Montgomery | 650 | 550 | 31,010,807 | 31,996,030 |
| Fee 1, Montgomery | 675 | 610 | 24,914,433 | 23,744,490 |
| Meunch 1, Pelican | 213 | 212 | 4,412,500 | 4,251,840 |
| Meunch 2, Pelican | 224 | 222 | 781,962 | 640,000 |
| Meunch 3, Pelican | 213 | 212 | 4,548,480 | 4,527,557 |
| Hare 1, Pelican | 220 | 220 | 1,855,376 | 1,567,500 |
| Wuichet 1, Pelican | 282 | 270 | 1,144,123 | 705,470 |
| Shell 1, Pelican | 620 | 587 | 1,433,710 | 1,728,000 |
| Gayle 1, Standard | 610 | 575 | 5,963,933 | 5,699,925 |
| Schwartz 1, Standard | 655 | 570 | 25,221,003 | 24,531,540 |
| Walker 1, Standard | 207 | 210 | 7,684,509 | 7,795,165 |
| Walker 2, Standard | 219 | 217 | 9,982,101 | 10,648,640 |
| Vinson 1, Standard | 222 | 218 | 2,518,279 | 2,477,950 |
| Vinson 2, Standard | 220 | 220 | 3,310,327 | 3,310,327 |
| Spades 1, Standard | 214 | 212 | 1,774,720 | 1,758,216 |
| Puckett 1, Standard | 476 | 423 | 3,759,794 | 2,651,220 |
| Puckett 2, Standard | 403 | 390 | 322,054 | 271,730 |
| Lieber 1, Standard | 542 | 360 | 1,215,383 | 1,312,000 |
| Mauser 1, Standard | 245 | 240 | 465,988 | 456,482 |
| Stovall 1, Stovall | 1,015 | 1,015 | 11,141,220 | 11,141,220 |
| Schwab 1, United | 1,000 | 1,000 | 5,157,360 | 5,157,360 |
| Gray 1, United | 570 | 570 | 3,934,140 | 3,934,140 |
| Perry 1, Standard | 610 | 560 | 3,235,061 | 2,349,000 |
| Wilson 1, United | New well | 775 | New well | 7,344,000 |
| Wilson 2, United | New well | 780 | New well | 6,457,000 |
| Archie 1, United | New well | 765 | New well | 12,344,000 |
| Burton 1, United | New well | 733 | New well | 19,538,460 |
| United Oil & Nat. Gas Prod. Corp.: | | | | |
| Cole 1 | 855 | 620 | 19,619,077 | 16,305,080 |
| Balkum 1 | 320 | 270 | 9,395,806 | 8,349,120 |
| Balkum 2 | 435 | 435 | 3,039,878 | 3,039,878 |
| Eldridge 1 | 410 | 360 | 3,468,486 | 2,400,000 |
| Eldridge 2 | 375 | 325 | 14,598,169 | 9,279,040 |
| Fee 1 | 340 | 280 | 11,615,800 | 9,279,040 |
| Harris 1 | 577 | 485 | 7,076,771 | 4,140,000 |
| Harris 2 | 595 | 550 | 16,446,239 | 11,916,800 |
| Perry 1 | 795 | 640 | 18,742,045 | 15,878,208 |
| Squires 1 | 670 | 620 | 12,280,937 | 7,324,900 |
| Guthrie 1 | 875 | 875 | 9,529,000 | 9,529,000 |
| West Virginia Oil & Gas Co.: | | | | |
| West Virginia 1 | 220 | 210 | 6,553,032 | 6,552,000 |
| West Virginia 2 | 220 | 210 | 12,092,297 | 11,542,097 |
| West Virginia 3 | 220 | 210 | 3,243,069 | 2,752,160 |

# Spang Drilling Jars Thrive on Hard Work!

Hard lime, sand and cavey formations mean nothing to SPANG JARS. They're built to withstand the most difficult drilling conditions.

The repeat orders of hundreds of progressive drillers throughout the oil country are convincing evidence of the satisfaction SPANG JARS bring to their users.

Try them—you'll never use any other jar in the future.

Spang Weldless Jars are stocked by over 300 Supply Stores—buy them from your nearest supply house.

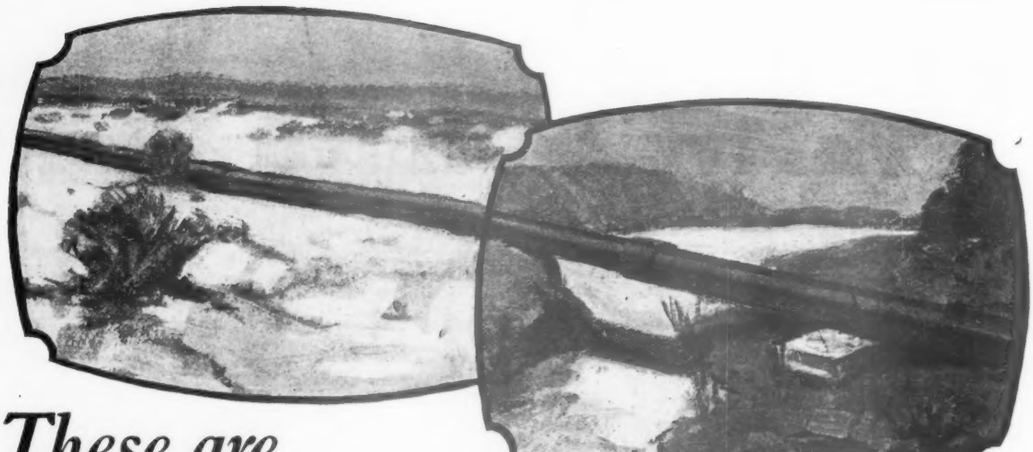
## Spang and Company

**Butler, Penna.**

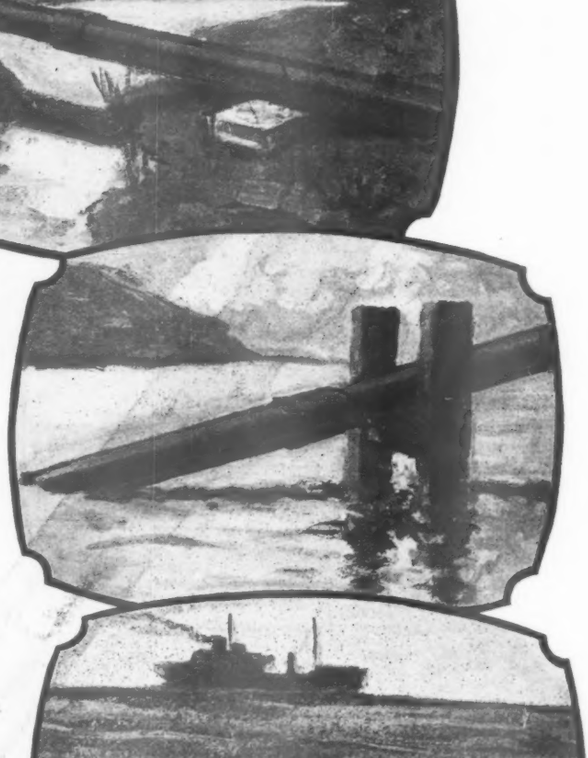
*Sold by All Leading Supply Companies*

**Spang Thread Protector**

Protect your Tool Joints with SPANG Thread Protectors. *Like all Spang products they guarantee absolute satisfaction and long, durable service.*



# *These are* DANGER ZONES *for Ordinary Pipe*



ALKALI, Marshy Bogs, River Crossings and Salt Water are met by nearly every long-distance pipe line. In every one of them lurks the greatest enemy of steel—corrosion.

To safely conduct oil across these danger zones it takes the rust-resisting properties of Reading Genuine Wrought Iron Pipe. For Wrought Iron, as made by Reading, will outlast steel two to three times over, and give an extra measure of service far out of proportion to its slightly higher price.

*The best pipe line is all-Reading. The next best is Reading in the danger zones, where it makes the weak spots strong and adds many years to the life of the entire line.*

**READING IRON COMPANY**
**Reading, Penna.**

*World's Largest Makers of Genuine Wrought Iron Pipe*

OIL WELL SUPPLY COMPANY, Distributors
Inquire at any of their 100 branches

# READING PIPE
## GENUINE WROUGHT IRON

## KENTUCKY-TENNESSEE

(Continued from Page 55)

from the Glasgow Field of Barren County in the western division. This means that the Barren County Field for August shows a total runs of 33,102.20 bbls., nearly the peak production for the county. The oil is of the Somerset light grade, both in Barren and Lee Counties.

### Week's Work

A summary of the week's work in the Kentucky Field shows 32 completions, 25 producers with an initial production of 271 bbls., 7 dry holes and no gas wells. Compared with the previous week, there were 12 more completions, 12 more producing wells, 155 bbls. more new production and the same number of dry holes. The wells were distributed by counties and districts as follows:

| County— | Oil Comp. | Wells | Prod. | Dry |
|---|---|---|---|---|
| Lawrence-Johnson | 7 | 7 | 60 | 0 |
| Barren | 5 | 5 | 105 | 0 |
| Owensboro | 4 | 3 | 35 | 1 |
| Estill | 3 | 3 | 30 | 0 |
| Lee-Owsley | 3 | 1 | 3 | 2 |
| Wayne | 3 | 1 | 1 | 2 |
| Johnson-Magoffin | 2 | 2 | 28 | 0 |
| Warren | 2 | 1 | 5 | 1 |
| Allen | 3 | 2 | 4 | 1 |
| Total | 32 | 25 | 271 | 7 |
| Last week | 20 | 13 | 116 | 7 |
| Difference | 12 | 12 | 155 | 0 |

### Eastern Division

In the eastern division of Kentucky, one of the new and interesting points is near Ivyton, in the southeastern part of Magoffin County, near the Floyd County line, where Hupp, Duff and Chiles recently brought in two wells with a flush of about 40 bbls. each, and which shows a 2-mile extension to the producing area on the Magoffin County side of the division line of the two counties. When wells of this caliber are found it means an active development. These wells are on the B. F. Whitt lease in District 31. In the same district but within defined limits, the South Fork Oil Co.'s No. 9 on the H. H. May farm is credited with an initial of 20 bbls. In District 25, Magoffin County, the Atlantic Oil Producing Co.'s No. 22 on the Gardner Blanton farm is estimated at 8 bbls.

In the North Weir Field of Lawrence-Johnson Counties, the Swiss Oil Corp. has five new completions reported. In District 22 this company's No. 20 James Skaggs farm is a 7-bbl. pumper; No. 23 on the C. K. Dobyne No. 1 farm, District 22-A, is good for 8 bbls.; in District 32 its No. 44 J. J. Gambill farm and No. 46 P. P. Holbrook farm are 10-bbl. pumpers, while in District 33 the same company's No. 23 on the J. M. Fyffe farm is good for 10 bbls. In District 22, Garrison & Townsend's No. 12 on the L. T. Sparks farm is a 5-bbl. pumper and in District 32 the Wheeler-Watkins Oil & Gas Co.'s No. 4 Estes Walters farm is a 10-bbl. pumper.

In the Irvine Field of Estill County the Superior Oil Corp. is having quite a drilling campaign on the Simp Horn farm, District 8, where its Nos. 20 and 21 are credited with 10 and 8 bbls., and the Reno Oil Co.'s No. 8 Oscar Tipton heirs' farm, good for 12 bbls. The Superior keeps three or four strings working on the Simp Horn lease, which has proven a very valuable one and even production appears to be found over the large acreage of this piece of land, in all wells drilled.

In Lee-Owsley Counties the Superior Oil Corp.'s No. 28 on the J. W. Proffitt heirs' farm, District 16, is estimated at 3 bbls. Henry Oil Co.'s No. 1 on the Dean heirs' farm, District 36, is a duster, as is the No. 3 of S. S. Yantis and others on the Delina McGuire farm, District 35.

In the Monticello Field of Wayne County, O. M. Carter's test on the D. C. Denny farm, District 5, pumped but 1 bbl. initial production. The Wood Oil Co.'s No. 65 on the Miller Brothers farm, District 2, and Davis and others' No. 1 on the Gregory-Ramsey farm, District 5, were both dry holes.

### Western Division

Just at the present time the Owensboro Field of Hancock, Ohio and Daviess Counties, and the Glasgow Field of Barren County are the most actively developed areas, as Warren, Allen and Simpson Counties, are very quiet and have been for several months. Cumberland, Monroe and Clinton Counties have a few new developments started, but report no completions. Butler and Grayson Counties have test wells that should soon show signs of oil or drop into the duster list.

Reports are very meager from the Glasgow Field of Barren County, there being but five new completions reported, all being made by the Consolidated Gas Co. on the H. W. Duff farm, north of Glasgow, in the extension to the Hall Baker Pool. These wells are Nos. 42, 43, 44, 45 and 46, with initial production of 20, 20, 20, 20 and 25 bbls. respectively. No. 41 same farm, was also a 25 bbls. initial producer, and No. 47 is due for completion.

In the Scottsville Field of Allen County F. J. Tapp's No. 13 on the I. P. Hill farm, is a 3-bbl. pumper at 450 feet. O. M. Widdowson's No. 6 Gibson farm is a 1-bbl. pumper at 455 feet. A. Davis, has a salt water well at No. 5 on the W. M. Dodson farm at 280 feet and drilling No. 6. John Dobie, attorney, is drilling a test on the Connie Justice farm. Dodson and Strait are shut down at a test on the I. Strait farm. Lee Moore is drilling No. 7 on his No. 2 farm. Buchannan & Buchannan are nearing pay sand at No. 9 Buchannan farm. Lackawanna Producing Co. has broken down at No. 9 on the Andy Smith farm.

In the Bowling Green Field of Warren County, H. W. Teague and others brought in a dry hole in No. 4 on the Allen Manning farm. E. H. Fuller's second well on the Cooper Morgan farm pumped 5 bbls. at 1,002 feet. T. A. Sheridan is shut down at a depth of 320 feet at No. 6 on the Georgia Ann Davenport farm. Thessen & Cupler are down around 200 feet at No. 2 D. C. Butler farm. Phillips, Stewart and others are below the 800-foot depth at a test on the Jeff Coley farm. Hogan and others are reported at 575 feet at No. 2 Hundley & Walters farm. C. P. Tannehill reported below 500 feet at a test on the George Perkins farm. P. H. Lavelle is down 275 feet at last report in his No. 9 W. R. Hunton farm. Dr. W. B. Cauble's No. 11 J. Vance is close to 300 feet.

### Owensboro Field

The gathering of the head men of a number of oil companies operating in the Owensboro Field of Hancock, Ohio and Daviess Counties, is an indication, it is claimed, of a renewed development. Representatives of the New Domain Oil & Gas Co., Ohio Oil Co., White Plains Oil & Gas Co., Rex Pyramid Oil Co., Petroleum Exploration Co., along with new individuals that are trying to secure leases for development work, means that if good weather conditions prevail, the next couple of months will see the greatest activity in the history of the field. The California Gold Development Co. is a new concern to enter the field and is developing the Allie Evans lease.

A number of new wells are in the sand and making good showings, but they are not yet completed and put on the pump, therefore their value can not be given. The Spice Knob Oil & Gas Co.'s No. 7 on the Bert Thompson 40 acres, near Pellville, is in the sand and showing for a good producer. The original well on this lease was drilled more than three years ago, and is still a good producer, with no dry holes and with the last well means seven producers. No. 7 is estimated around 15 to 25 bbls. initial when connected up. It is 400 feet west of No. 6 on the same farm.

The Chicago Petroleum Syndicate's No. 9 on the Guenther-Gant 134 acres in the Swope Pool is rated at 15 bbls. Viclon Oil Co.'s No. 12 in the center of the O. T. Burdette 35 acres is reported at 5 bbls. White Plains Oil & Gas Co.'s No. 1 on the Ira Howard 216 acres is reported dry.

Other wells in the sand making good showings but not completed are: The Penn Indiana Oil Syndicate's No. 2 on the Simpson heirs' 126 acres; No. 1 on the B. D. Spurrier 50 acres; Wood Oil Co.'s No. 2 on the J. U. Bartley 139 acres, 350 feet north of No. 1 same farm;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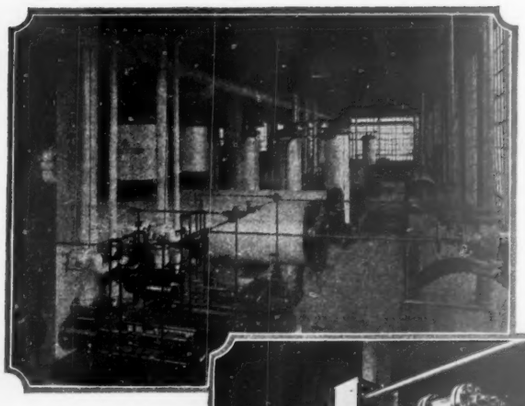

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the Ohio Oil Co.'s No. 1 on the Daly farm, half a mile northeast of Pleasant Ridge, which was delayed by a fishing job; Johnson and Engle's No. 1 on the J. L. Trodgeon 90 acres, the most southerly test in the field, if a producer, will open up a wide territory for development work; Ellis & Courson's No. 1 on the A. Martin 65 acres; Ohio Oil Co.'s No. 1 Alonzo Crowe, 50 acres, an offset to No. 1 on the Ellis-Helpin farm well; White Plains Oil & Gas Co.'s No. 4 on the John C. Ward 50 acres, and C. E. Daugherty and others' No. 3 W. T. and Ernest Bickett farm.

J. W. Loman, trustee's No. 2 on the J. R. Ellis 100 acres, proved dry in the Jett sand, but is drilling to the Barlow sand.

### Mississippi

R. S. Withers in the Wimona (Mississippi) Times, has this to say of developments along the Mississippi River in both Louisiana and Mississippi: The Vacuum Oil Co. and the Simms Petroleum Co. have derricks up and actual drilling is now in progress on large blocks of acreage controlled respectively by these companies. These wells are in West Feliciana Parish, Louisiana, and the Vacuum company has extended its leases into Mississippi which state borders the territory on the north. These two ventures are the only real tests that will be made east of the Mississippi River and should they result favorably will prove up the southwest portion of Mississippi, which has always been looked upon favorably by some very eminent geologists. Several years ago one or more wells were put down in this parish, near Tunica Landing, but were abandoned presumably for want of proper finances. In line with these operations it is interesting to note that the well at Mound Bayou, which is being drilled on the Maxwell Plantation, is reported to have struck oil within the past few days. The report has not been verified yet. This location is about 8 miles west of the river, opposite Vicksburg, and will be watched with a great deal of interest by Mississippi oil men. These wells may solve the much-discussed problem whether the Mississippi River marks the eastern boundary of the Arkansas and Louisiana oil fields. Personally, I do not think the Mississippi River has any more effect geologically than a line of wire fence or any other surface markings.

Of the wells actively drilling, the following comments are offered:

Alhambra well, near Glen Allen in Washington County, has spudded in and is reported to be drilling at the last reports available. The depth reached cannot be reliably ascertained. This well is one of the most important east of the river.

Magic City well in Stone County is reported to have reached a depth of about 900 feet when a boiler explosion occurred. Drilling operations have been suspended until repairs have been made.

Becker Huson (Transcontinental). Recently those in charge of this important well have seen fit to cover their operations with a screen of secrecy so far as outside public is concerned. The most reliable information obtainable is that they are down about 1,900 feet. They are progressing very cautiously and seem to be doing a lot of core work. This would seem to indicate they are in a favorable horizon.

Roxana Petroleum Corp. — Notwithstanding the reports current for several months about this well being put into actual operation at an early date, nothing tangible has happened. Reliable authority states that a real test will be made. Drilling has commenced at this well.

Ben White.—This location is in the southwest corner of Copiah County. The derrick is up and the machinery is in place but actual drilling has not been commenced.

Free Run No. 2.—Under the supervision of Bill Young this well has made wonderful progress since it was spudded in early in May. It has now reached a depth of 2,525 feet and from the surface down the hole has been made without a single accident or fishing job. Mr. Young reports that he struck the Selman Chalk at 2,410-20 feet, which is closer to the surface than this formation has ever been reached in the state. Indications are regarded as very favorable and it is predicted oil or gas will be reached between 3,100 and 3,200 feet. Mr. Young also reports that thin layers of pyrites and sulphur have shown up in the chalk. The promoter has decided to go down to 3,500 feet if necessary.

Word comes from Bassfield, Jefferson Davis County, Mississippi, that the people of that community are highly elated over prospects of oil and gas around Bassfield. After discovering a seepage of oil 2 miles west of the town, a geologist was called to investigate, and reported there were good prospects. Considerable leasing has been done and reports are some of the leases called for drilling operations to start within a very few weeks.

## CENTRAL WEST FIELDS

(Continued from Page 68)

William Frizzle 80 acres, Section 7. This company abandoned its location on the Elizabeth Biddinger 129 acres, Section 5. The Ohio Oil Co. is drilling No. 2 on the L. M. Helbert 160 acres, Section 4. In Hanover Township, the Logan Gas Co. made a good gas strike at a second test in the northwest corner of the Frank Firestone 80 acres, Section 27, and staked locations for a test in the northeast corner of the B. M. Mavis 40 acres, Section 28, and No. 1 in the northeast corner of the Charles Van Scoder 40 acres, Section 27.

In Green Township, Ashland County, the Wiser Oil Co. drilled an average sized gas well at a test in the southwest corner of the Sanitary Product Co.'s 3 acres, Section 29. The Logan Gas Co. also struck an average gas well at a test in the northeast corner of the Walter C. Workman 80 acres, Section 20, and set a stake for a test in the northeast corner of the W. A. Rowe farm of 147 acres, Section 27.

### Good Gas Producer

In Sullivan Township, Ashland County, Klise-Eckstein-McCann Co. drilled a very good gas producer in No. 3 in the southeast corner of the J. A. Spencer 34 acres, Lot 3. The Ohio Fuel Gas Co. got an average gas well at a test in the southwest corner of the S. C. Baldorf 80 acres, Lot 84. This company has made a location for a test in the northwest corner of the L. B. and Evan F. Stine 122 acres, Lot 61, and also for No. 1 in the southwest corner of the Anna M. Pence 58 acres, Lot 62, while the Logan Gas Co. made a location for a second test in the northeast corner of the Lee and Gladys Burkhart 102 acres, Lot 80. Same company made a location for a test in the northeast corner of the R. N. Ahaw 80 acres, Section 12, Clear Creek Township, same county, and is now drilling its test in the southwest corner of the W. Frizzle 88 acres, Lot 4, Troy Township, same county.

The Logan Gas Co. brought in a nice gas well at a second test in the southwest corner of the Nick A. Granson 82 acres, Section 3, Liverpool Township, Medina County, and made a location for a test in the northeast corner of the L. Hance 45 acres, same section.

In Columbia Township, Lorain County, the second test of the Logan Gas Co., in the northwest corner of the William Rundell 20 acres, Lot 74, proved a dry hole. The Chemical Oil & Gas Co. is drilling No. 3 on the F. Adams 53 acres, Lot 31.

In Wayne County, Wooster Township, the Ohio Oil Co. is drilling deeper its No. 4 on the John M. Carroll farm, Section 21, and made a location for a test 600 feet from the south line and 1,000 from the east line of the Albert Berger 145 acres, Section 29. In East Union Township, the Logan Gas Co. is drilling a test on the L. Lautenschlager 80 acres, Section 22.

### Wayne County Gas Wells

In Paint Township, Wayne County, the Ohio Fuel Co. drilled an average sized gas well at a test 1,320 feet from the north and east lines of the J. M.

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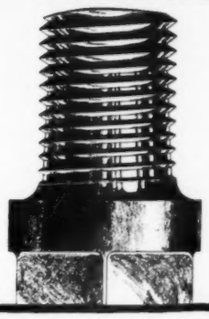

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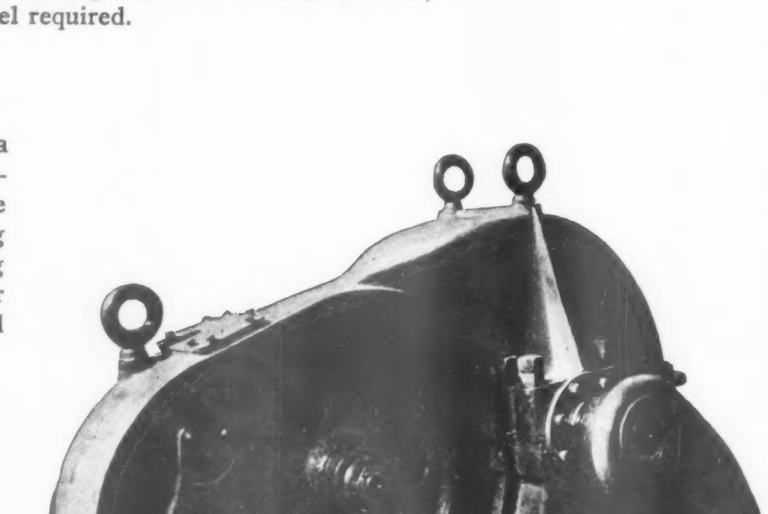

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Westcott 161 acres, Section 7. In Plain Township, the East Ohio Gas Co. brought in a light gas well at No. 4 well, 1,550 feet from the north line and 1,000 from the east line of the J. G. Yocum 162 acres, Section 35, and drilling No. 5 in the northeast corner of the same farm. Same company had a duster in a test in the southeast corner of the B. Mibach 153 acres, Section 20, Milton Township.

Ohio Fuel Gas Co. has an average gas well at a test in the southeast corner of the Lowery Johnson farm, Section 33, Congress Township, Wayne County. The Logan Gas Co. got a duster at its test in the northwest corner of the E. K. Weltman 40 acres, Section 33. Glen Harmon and others are drilling a test in the southwest corner of the C. W. and A. Keener 155 acres, Section 31. The Logan Gas Co. is drilling a test in the northeast corner of the H. B. Holmes 154 acres, Section 32.

The Klise-Eckstein-McCann Co. drilled in a test in the southeast corner of the Caroline Cullen 80 acres, Lot 20, Hardy Township, Holmes County. This well shows for a 10-bbl. producer and about 500,000 feet of gas and will be given a shot in hopes of increasing the oil production as well as the gas. This company staked a location for a well in the southwest corner of the Virgini Tidball farm, same section. Empire Gas & Fuel Co. made a location for a test in the northeast corner of the L. and W. G. Hilderbach 45 acres, Lot 7, and is drilling a second test in the southwest corner of the Lewis Donald 24 acres, Lot 12. East Ohio Gas Co. is drilling a second test in the northeast corner of the J. E. and M. Miller 146 acres, Lot 15.

In Prairie Township, Holmes County, the Pure Oil Co.'s No. 3 in the northwest corner of the Lee Durbin 30 acres, Section 17, is reported a 35-bbl. initial producer from the deep Clinton sand. East Ohio Gas Co. made a location for No. 4 well, 300 feet from the north line and 865 from the east line of the L. A. Sowash 40 acres, Section 17. Logan Gas Co. is working at a test in the southwest corner of the Emmanuel B. Weaver 130 acres, Lot 33, Paint Township, same county.

**Athens County Test.**

C. A. Cody and others drilled an average gas well in a test, 321 feet from the south line and 843 from the west line of the Hannah McCall Davis 26 acres, in Carthage Township, Athens County, getting the gas in the Maxon sand at 800 feet. The Logan Gas Co. found a duster in a test in the northwest corner of the Myrtle Runyon 24 acres, Lot 6. This company is drilling No. 3 in the southwest corner of the W. O. and Mary Stout 54 acres, Lot 2, and made a location for a test in the northwest corner of the B. W. Barnhill 79 acres, Lot 25. Ohio Fuel Co. is drilling a test in the northeast corner of the S. S. Huffman 121 acres, Lot 3. In Waterloo Township, the Arkansas Fuel Oil Co. is drilling a test on the M. G. Wood 85 acres, Section 25.

The No. 3 well of Murphy and others in the southeast corner of the Mossholder 163 acres, Section 15, Perry Township, Coshocton County, showed an initial 24 hours' production of 191 bbls. Sand was found at from 3,050 feet to 3,106 feet, total depth 3,110 feet. Pay sand was struck after the drill had penetrated the sand to a depth of 35 feet, there being really 21 feet of what is called pay sand in the hole, the drill being stopped after passing 4 feet below the bottom of the sand. No. 4 is being started. In the same township, the Arkansas Fuel Oil and the Pure Oil Co. drilled a joint well on the E. C. Howell 71 acres, Section 25, located 150 feet east of the road passing through the farm and 300 feet north of the south line. It was given a shot, and the first 24 hours' production amounted to 32 bbls. In Newcastle Township, same county, Cassingham & Bell Brothers' No. 16 on the Cassingham farm, Lot 5, is a small gas producer from the shallow sand. No. 17 is drilling in the northwest corner of the same farm, which contains 319 acres. In Pike Township, same county, H. H. Miller and others' second well on the Charles E. Moore farm, Section 8, made 35 bbls. the first 24 hours.

**Cleveland Field.**

Five completions are reported from the Cleveland Field, in Cuyahoga County. In Dover Township, Hulse & Kundtz's second well in the southwest corner of the Nellie E. Hodge 20 acres, Lot 27, and their No. 1 well, 200 feet west of the road and center of the east and west lines of the James Jenkins 13 acres, Lot 18, were both nice gas producers in the Newburg sand. Arthur & Simpson's No. 1 in the northwest corner of the J. A. Hoover 12 acres, Lot 8, and No. 1 in the northwest corner of the C. and M. King 5 acres, in Lot 18, are both excellent gas producers from the same formation. The Ohio Pipe & Supply Co.'s test in the southwest corner of the E. Rice 6 acres, Lot 19, is one of the best of the late gassers found, showing close to 2,500,000 feet initial. Hulse & Kundtz are drilling a test in the N. H. Austin 6 acres, Lot 17, and No. 1 on the J. Jenkins 2 acres, Lot 18. Logan Gas Co. is drilling No. 1 on the G. Dunford 50 acres, Lot 16, and No. 1 on the A. Dunford 12 acres, Lot 15. Wiser Oil Co. is drilling a test on the G. W. Jenkins 50 acres, Lot 26, and Dempsey Bros. are starting No. 1 on the L. M. Coe 19 acres, Lot 18. In Strongville Township, same county, Dillon & McFrederick Brothers have a very light gas well on the K. W. Grieb 26 acres, Lot 58.

**Offside Completions**

In Barlow Township, Washington County, the Logan Gas Co.'s No. 1 O. E. Thompson, Lot 689, shows for close to 1,000,000 feet of gas. Muskingum Gas Co.'s No. 4 J. S. Cunningham, Lot 17, and No. 4 George N. Laynachen, Lot 1029, are both gas wells, while No. 4 Mary J. Smith, Lot 68, is reported dry in the Keener sand.

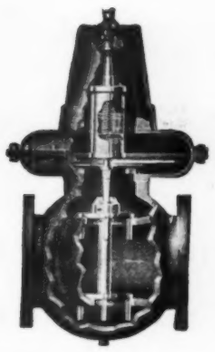
**Michigan**

Owing to the holding of the annual fair in Saginaw, Mich., during the week, very little was accomplished in the new Saginaw Field in the way of bringing in new wells, as none were reported entirely completed. The nearest completion was that owned by J. H. Shaltry and others on the Reinhart property, in Carrollton Township, and not far removed from producing wells. This well has been drilled in and given a shot, but a leaky boiler caused a shutdown until repairs are made, so that the hole can be cleaned out, tubed and connected to tanks. It is reported to have a fair showing, but what it will do will not be known until given a 24-hour test.

The test of the Sun Oil Co. on the Stelzriede farm, near the center of Section 11, Saginaw Township, and in the northwest quarter, the farthest northern producing well in the field, is not as good as first expected and is now reported at 2½ bbls., which means that the north edge of the pool has been found. It is close to a mile south of the dry hole on the Boldebuck farm. The Sun Oil Co. has five wells now nearing the Berea sand. They are the Nos. 3 and 4 Schoenteit farm, No. 1 Bradshaw, No. 1 Scherzer and No. 1 Rabe. Should the latter three prove producers, they will add quite a little territory to the field, being located to the northwest of the Sun Oil Co.'s wells on the Schoenteit, Weiss and Nuerminger farms, and a little south of the small well on the Stelzriede farm of the same company and east and a little south of the Ohio Fuel Corp.'s No. 1 on the Fisher farm.

**Test to the East**

That the Berea sand holds a good pressure is shown by the action of two wells of the Saginaw Prospecting Co. that were shut down. This company's Kruscka farm well was shut down for a short period, and when opened up flowed 50 bbls., and No. 1 on the Bremer farm flowed the same amount after being closed in for a short time. This company has made two new locations within defined limits. One is on the Peikert lease, on Hermansau Road near the Pere Marquette belt line tracks, the other being on the John Brechtelbauer, also on the Hermansau Road. Same company has made a location outside of defined limits for a test east of the city of

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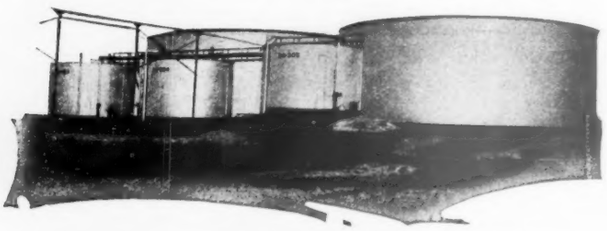



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Such an instance is the present trend toward Aluminum Paints. It is practically a new problem to the paint industry—except to the few who "saw it coming" through close contact with leading Oil Minds.

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*"Dependable as a Lighthouse"*

Saginaw, on the E. G. Rust farm, on North Washington Avenue Road to Bay City, and about a mile east of the city. This will be a test about 4 miles east of any previous production. The contract for the drilling has been let to Malin Clover, and material for a derrick is being transported to the lease. The east location is on a 320 acres, in Section 9.

J. L. Hoover has moved material for a well for the Wayco Oil Producing Co., on the Mrs. Braun property on Weiss Street, a short distance east of Michigan Avenue. A new machine will do the work. The Great Lakes Co. has a rig under construction for a well on the Fred Tomforde property, near Harrison and Madison Streets, in Carrillton Township. J. W. McIntosh, well-known contractor from the Payne Field, in Paulding County, Ohio, will do the drilling. Both these companies are new ones in the Saginaw Field.

There is a possibility of the Saginaw Field getting an oil well supply store, as there is talk of the Magner Supply Co. of Sistersville, W. Va., entering the field with a line of supplies.

Leasing continues in all parts of Saginaw County, as well as in Bay and Midland Counties. Recent leases filed are: William C. Mertz, lease on six Carrollton lots; Saginaw Prospecting Co., 30 acres of the Charles Meinecke and 10 acres of Anthony Kocis, in Buena Vista Township, also a 320-acre lease on the 320-acre Rust farm, Section 9, same township, and two lots in the Penoyer Farm.

Arthur H. Horton filed three leases on 240 acres in St. Charles Township. Albert Kipp left for record leases on two lots in Carrollton Township. A. H. Graves left for record by A. H. Graves, trustee, on 21 lots in Carrollton and 128 acres in St. Charles Township. J. L. Hoover secured lease on approximately 15 lots in the corporate limits of Saginaw.

## THROWS LIGHT ON SOUTHERN ARKANSAS

(Continued from Page 64)

rated from the underlying marl by a well-exposed and persistent lithologic and faunal break. The chalk rests on an irregular surface, and its basal few inches locally contains glauconitic sand. Almost everywhere borings filled with glauconitic chalk extend down into the underlying marl. The lower few feet of the Saratoga consists of hard sandy or marly chalk with disseminated glauconite, phosphatic nodules, and casts of fossils; and contains abundant large shells. The uppermost Marlbrook is usually a pure dark-gray marl without sand, which weathers light gray, but in its upper few feet there are many small isolated pockets or lenses of glauconitic chalk of the same character as the borings that extend from the base of the Saratoga in the marl. The upper part of the Saratoga contains marl and clay and in eastern Clark County includes beds of chalky sand containing abundant small black macerated plant fragments. Typical outcrops of this formation are present just north of Saratoga on the road to Nashville; 1.3 miles south of Okolona on the road to Prescott; and in the SE Section 30-7s-20w., along the road from Okolona to Arkadelphia.

**The Nacatoch Sand.**

Nacatoch Sand.—The Nacatoch sand, which unconformably overlies the Saratoga chalk, is a complex unit composed of cross-bedded yellowish and gray fine-grained quartz sand; hard crystalline fossiliferous sandy limestone; coarse, richly glauconitic sand; fine argillaceous dark blue-black sand; and pure light-gray clay and marl. For some distance east of Little Deciper Creek the Nacatoch completely overlaps the Saratoga chalk and rests directly on the Marlbrook marl. The Saratoga, however, reappears from under the Nacatoch in the immediate vicinity of Arkadelphia.

The Nacatoch formation is divisible into three lithologic units, which are continuously traceable from a point west of Washington, in Hempstead County, eastward to Dobyville, in Clark County. These three units are completely gradational one into another. The lowest consists of bedded gray clay, sandy clay, and marl; dark clayey, very fine grained sand; and harder irregular concretionary beds, and contains lenses of calcareous fossiliferous, slightly glauconitic sand. Both eastward and westward this lowest part of the Nacatoch changes laterally to fine-grained gray cross-bedded quartz sand which weathers yellowish and contains partings and pockets of gray clay. This lowest unit is estimated to be 100 feet thick north of Washington and is about 60 feet thick of a dark-greenish sand, which contains from 20 to 80 per cent of coarse glauconite grains and weathers to lighter shades of green. It is generally highly fossiliferous where strongly glauconitic. The middle unit also contains hard irregular concretionary beds cemented with calcite, and subordinate beds of dark blue-gray argillaceous massive fine-grained sand. The green-sand member is approximately 50 feet thick near Washington and 40 feet thick near Okolona. East of Terre Noir Creek, in Clark County, it grades into gray quartz sand which weathers yellow and locally contains small poorly preserved fossil prints and casts. It has not been traced west of Sandy Bois d'Arc Creek, in Hempstead County. There are good outcrops of this green sand member just east of the Washington railroad station and also 4 miles a little east of south of Okolona, in the NE Section 26-9s-22w.

The upper part of the Nacatoch is composed of unconsolidated gray fine-grained quartz sand, which weathers yellowish and reddish. Cross-bedding is commonly present in this sand but is obscure unless revealed by the differential weathering of thin clay partings. Locally the sand is massive and structureless and contains a few hard lenses and beds of fossiliferous sandstone, cemented by crystalline calcite; also beds of gray and white clay as much as 2 feet thick.

West of Washington and east of Dobyville the Nacatoch can not be divided into the three units just described, but instead it consists chiefly of sand such as is characteristic of the upper of the three units. Between Saratoga and Fulton the whole thickness of the Nacatoch apparently consists of sandy beds of uniform composition, but near Arkadelphia and for some distance west of it the lower part of the Nacatoch consists of dark-gray or greenish-gray massive argillaceous fine-grained sand, which contains scattered grains of glauconite. Distributed through this massive sand are small lenses and beds of hard dark-gray sandstone cemented by crystalline calcite. Some of these lenses contain numerous fossils; others are nonfossiliferous. Some contain pebbles of black chert and grayish-white quartz, brown and black fragments of wood, small shark teeth, slender leaf imprints, and scattered glauconite. This lithologic unit is at least 100 feet thick as exposed at High Bluff on Ouachita River, but westward it grades rapidly into yellowish sand that is only slightly argillaceous and contains only small poorly preserved fossil prints.

The Nacatoch is about 400 feet thick in western Hempstead County but thins gradually eastward to about 150 feet near Arkadelphia.

**Arkadelphia Marl**

Arkadelphia Marl.—The Arkadelphia marl is the uppermost formation of the Gulf series and overlies the Nacatoch sand unconformably, resting upon an irregular surface of slight relief which probably represents only a brief time break. The basal few feet of the Arkadelphia contains hard calcareous gray sandstone, lenses of fossiliferous sandy gray limestone, and gray calcareous sandy clay. The remainder of the formation consists almost exclusively of dark marly clay and marl, which weather light gray. The marl and clay are poorly bedded or massive and in most places have a markedly conchoidal or lumpy fracture. The marl is prevailingly free from sand and contains locally a few layers of dense gray concretionary limestone or white impure chalk. The Arka-

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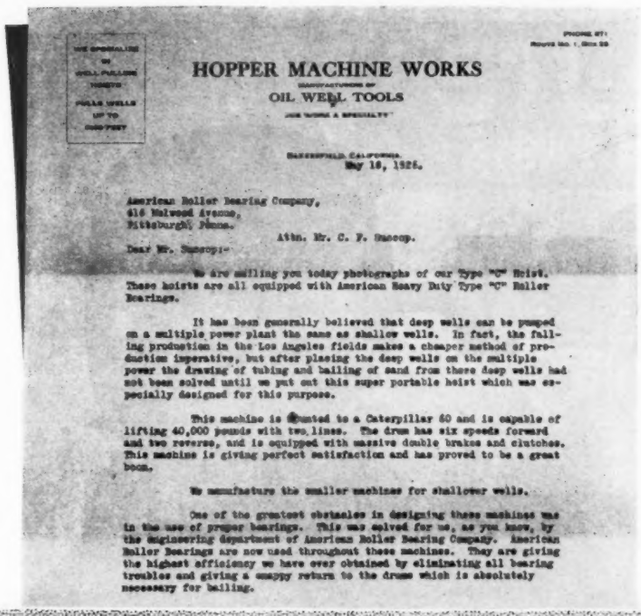

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Bakersfield, California.
May 10, 1926.

American Roller Bearing Company,
416 Holwood Avenue,
Pittsburgh, Penna.

Attn. Mr. C. F. Bacon.

Dear Mr. Bacon:-

We are mailing you today photographs of our Type "C" Hoist. These hoists are all equipped with American Heavy Duty Type "C" Roller Bearings.

It has been generally believed that deep wells can be pumped on a multiple power plant the same as shallow wells. In fact, the falling production in the Los Angeles fields makes a cheaper method of production imperative, but after placing the deep wells on the multiple power the drawing of tubing and bailing of sand from these deep wells had not been solved until we put out this super portable hoist which was especially designed for this purpose.

This machine is mounted to a Caterpillar 60 and is capable of lifting 40,000 pounds with two lines. The drum has six speeds forward and two reverse, and is equipped with massive double brakes and clutches. This machine is giving perfect satisfaction and has proved to be a great boom.

We manufacture the smaller machines for shallower wells.

One of the greatest obstacles in designing these machines was in the use of proper bearings. This was solved for us, as you know, by the engineering department of American Roller Bearing Company. American Roller Bearings are now used throughout these machines. They are giving the highest efficiency we have ever obtained by eliminating all bearing troubles and giving a snappy return to the drums which is absolutely necessary for bailing.

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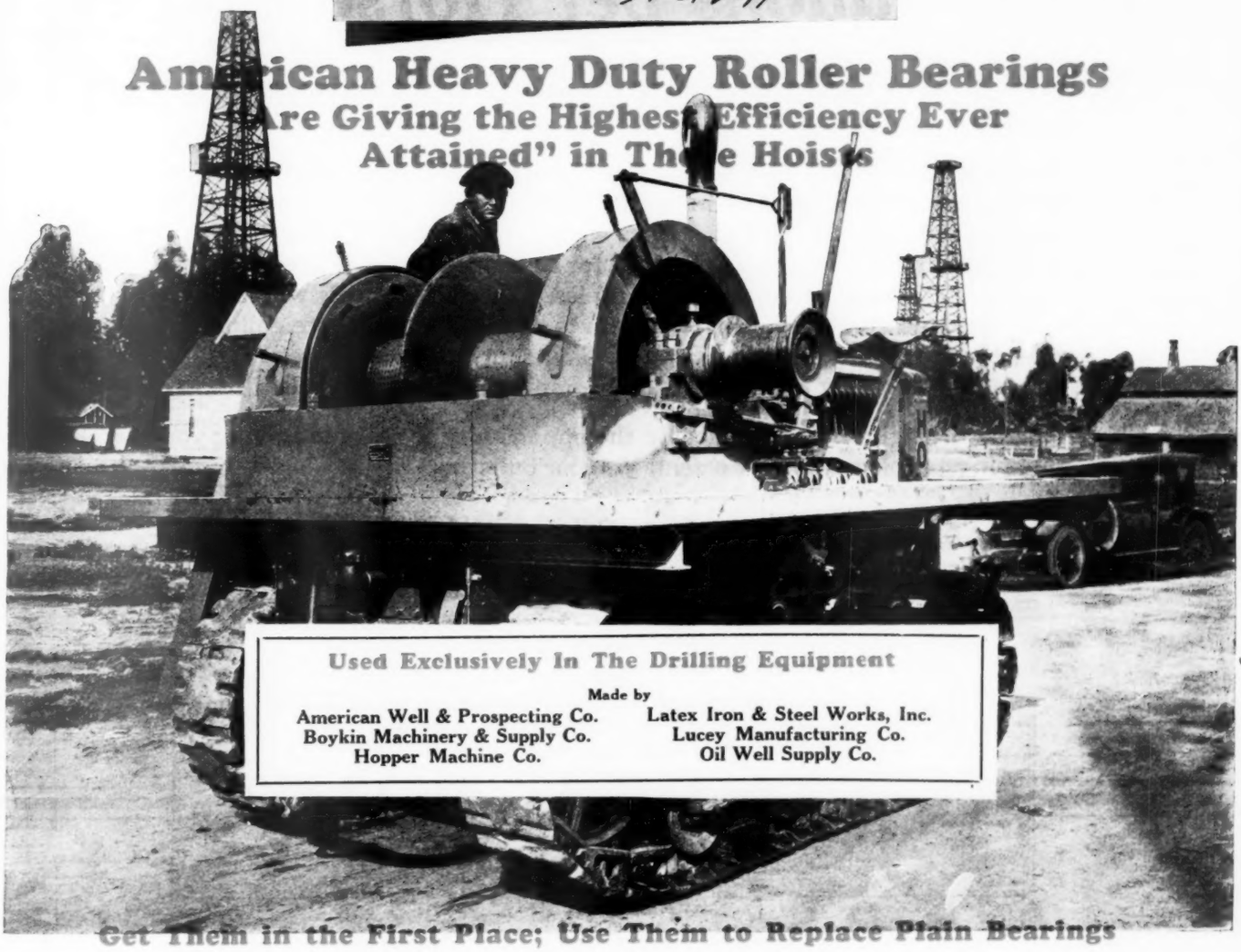

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ROTARY
NORTHERN PUMPS

delphia characteristically contains shell fragments and Foraminifera and in some outcrops yields an abundant fauna, though locally it contains no fossils.

The Arkadelphia marl along the outcrop has a thickness of about 150 feet which decreases eastward to about 120 feet in eastern Clark County. The thicknesses shown in the diagrams have been taken from the records of water wells drilled to the Nacatoch sand near the outcrop of the contact between the Arkadelphia and the overlying Midway formation.

### Tertiary Rocks

Midway Formation.—The early Eocene rocks that compose the Midway formation are separated by a considerable unconformity from the underlying beds of the Cretaceous Gulf series, but the contact is not conspicuous, owing to the general lithologic similarity of the beds above and below it. In some places the basal few inches of the Midway consists of a layer composed of grains of light-gray and black phosphate, glauconite, and calcite. This layer carries small oyster-shell fragments, a few fish teeth, and Foraminifera. Elsewhere the basal few inches of the Midway consist of hard calcareous layers containing phosphatic pebbles, some glauconite, reworked Cretaceous fossils, and abundant Eocene Foraminifera. At still other places the contact is marked by irregular phosphatic nodules and casts and by lenticular pockets of glauconite scattered through a calcareous clay. The lower 30 to 50 feet of the Midway, apart from the basal layer just described, normally consists of bedded calcareous clay that weathers brownish and contains numerous Foraminifera, which are in some places so abundant as to speckle it distinctly with white spots. Locally, in a zone 3 to 10 feet above the base of the formation, there are hard dense gray limestone beds and lenses, 6 inches to 1 foot thick, which weather yellow. These limestone beds contain numerous broken Eocene fossils, poorly preserved fossil casts, some glauconite and a few clay pellets.

The remainder of the Midway studied consists of monotonously uniform dark-gray noncalcareous clay, which on the weathered outcrop appears light brownish gray and bedded and shows an irregular and conchoidal fracture. This part of the formation is almost entirely free from sand but locally contains a few minute muscovite flakes. Some weathered outcrops contain concretionary sand beds a fraction of an inch thick that weather yellow, streaks of limenite, and hard black broken nodular concretions. Fossils, either large or microscopic, are exceedingly rare. This noncalcareous clay is the principal constituent of the Midway for at least 200 feet above the base.

Published data do not mention specifically the occurrence in this area of beds of Midway age east of the NW Section 26-11s-23w., but undoubted Midway crops out northeast of Prescott, in Section 4-11s-22w, northwest of Beirne, in Section 2-10s-21w, north of Smithton, in Section 10-9s-20w, and west of Curtis, in Section 36-8s-20w.

It is usually impossible to differentiate the Midway and the Arkadelphia on the basis of the lithologic descriptions afforded by a driller's log, but it is believed that a rough separaton of them could be readily accomplished by testing cuttings with hydrochloric acid. The lower 30 to 50 feet of the Midway and the Arkadelphia, being calcareous, would show effervescence with acid, whereas the Midway, except for its basal part, is not calcareous and would not effervesce. Until the general applicability of this test is established it should be applied with caution at considerable distances from the outcrop.

Eastward the formation becomes increasingly sandy. In the lower part there are beds that weather reddish, composed of fine-grained quartz sand mixed with considerable amounts of marly material. There is also massive blue-gray argillaceous sand, which contains hard calcareous sandstone lenses, and sandy gray marl. In the eastern part of its exposures the base of the Brownstown is marked by pure fine-grained cross-bedded quartz sand.

The Brownstown is from 200 to 250 feet thick in Hempstead County and farther west but thins east of Hempstead County. Good outcrops of typical Brownstown occur 0.65 mile southeast of Ben Lomond on the road to Brownstown and 4.4 miles north of Ozan on the road to Bingen.

Ozan Formation.—The rocks herein designated Ozan formation consist of sandy micaceous marl, unconformably overlying the Brownstown marl as here restricted and typically exposed along the middle fork of Ozan Creek. The town of Ozan, in Hempstead County, stands on their outcrop. They were included in the Brownstown marl of Veatch, but because of their somewhat different lithology and the unconformity at their base they are here separated as a distinct formation.

At the base of the Ozan formation in Sevier, Howard, and Hempstead Counties is a sandy marl or marly sand 3 to 8 feet thick, containing as much as 50 per cent of coarse glauconite grains. In many outcrops it also contains thin highly polished pebbles and grains of black chert, phosphatic nodules, and locally numerous shells, phosphatic casts, and shark teeth. The coarse sand rests on an irregular surface of the calcareous clay of the Brownstown marl.

### Typical Outcrops

The basal glauconitic sand of the Ozan crops out a short distance north of the village of Buckrange, also 1 mile northeast of the village, on the road to Nashville, in Howard County, and it is therefore here named the Buckrange sand lentil of the Ozan formation. A few other typical outcrops are located 0.3 mile south of Brownstown, on the road to White Cliffs; 0.5 mile west of Tollette, in Howard County, on the road to Schaal; and 3.5 miles south of Mineral Springs, on the road to Saratoga. This Buckrange sand merges gradually upward into a micaceous, very sandy massive marl with extremely abundant small oyster shells, frequently in coquina-like layers. There is a second glauconitic sandy marl 50 feet higher stratigraphically, which is well exposed in Howard County. It seems to be represented in Sevier County by a glauconitic chalky marl. Both glauconitic beds are present in Little River County. The upper part of the Ozan formation is almost uniformly massive dark sandy micaceous marl. Toward the top there are some beds of poorly bedded and cross-bedded marly sand in which the quartz grains are very fine, also a few beds of hard limestone.

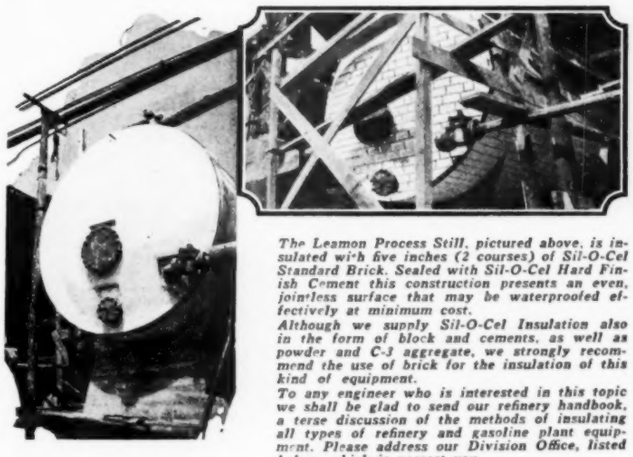
The Ozan is between 150 and 250 feet thick in Hempstead County and farther west but gradually thins eastward.

The Buckrange sand lentil of the Ozan formation thins toward the east, and inasmuch as the percentage of sand in the Brownstown marl increases in that direction, the differentiation of the Ozan and Brownstown becomes increasingly difficult and has been only tentatively accomplished in Clark County and thence eastward.

Annona Chalk.—The Annona chalk, which overlies the Ozan formation, is a massive and heavy-bedded hard white chalk that is sparingly fossiliferous. At the westernmost exposure in Arkansas, in the Rocky Comfort area, it is apparently transitional at the base into the Ozan formation, but east of this locality, where the base is exposed, there is a sharp break in lithology, and borings filled with chalk extend from the base of the Annona into the underlying sandy marl. The Annona chalk of southwestern Arkansas is of Taylor age and is the equivalent of the upper part of the Annona chalk as exposed at the type locality around Clarksville, Tex.

The Annona is about 100 feet thick in Little River and Sevier Counties but thins eastward, through Howard County, and in westermost Hempstead County, in the vicinity of Yancy, it is only 2 or 3 feet thick. East of this locality it is not present in the section.


SIL-O-CEL
HEAT INSULATION



*The Leamon Process Still, pictured above, is insulated with five inches (2 courses) of Sil-O-Cel Standard Brick. Sealed with Sil-O-Cel Hard Finish Cement this construction presents an even, jointless surface that may be waterproofed effectively at minimum cost.*
*Although we supply Sil-O-Cel Insulation also in the form of block and cements, as well as powder and C-3 aggregate, we strongly recommend the use of brick for the insulation of this kind of equipment.*
*To any engineer who is interested in this topic we shall be glad to send our refinery handbook, a terse discussion of the methods of insulating all types of refinery and gasoline plant equipment. Please address our Division Office, listed below, which is nearest you.*

# Why Brick Insulation?

The easiest way to insulate steel surfaces against heat radiation losses is with Sil-O-Cel Insulating Brick. The most efficient insulated construction also is attained by using insulating material in this form. And the cost is lowest by far, when you compare on the basis of heat savings and length of service from the insulation.

## A Smooth Surface

On the shells of stills, absorbers, heat exchangers, towers and other steel equipment, curved or flat, Sil-O-Cel brick in thicknesses of 1¼ inches or 2½ inches are simply cemented to the metal and secured in place by wire reinforcing. A final coating of Sil-O-Cel Hard Finish Cement seals all joints and leaves an even, unbroken surface, an ideal base for a waterproofing compound, such as Celcote.

## No Gaps

There are no gaps in this insulated construction, where air could get through and circulate inside the insulation. Every bit of the insulation is in absolute contact with the steel—and every bit of the steel can be covered. Removing a portion of the insulation for attention to the steel underneath, entails no great amount of trouble. The insulating brick removed can be replaced with relatively little loss.

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But the first advantage of Sil-O-Cel Brick is their wide adaptability. The "fire brick size" insulating brick that you use in still-furnace walls and boiler settings, where direct temperatures may run as high as 1600° F., are the most efficient insulating material you can get for any heated equipment in refinery or gasoline plant. You stock only one grade, one shape, one size of insulating material when you standardize on Sil-O-Cel brick insulation over all hot steel surfaces.

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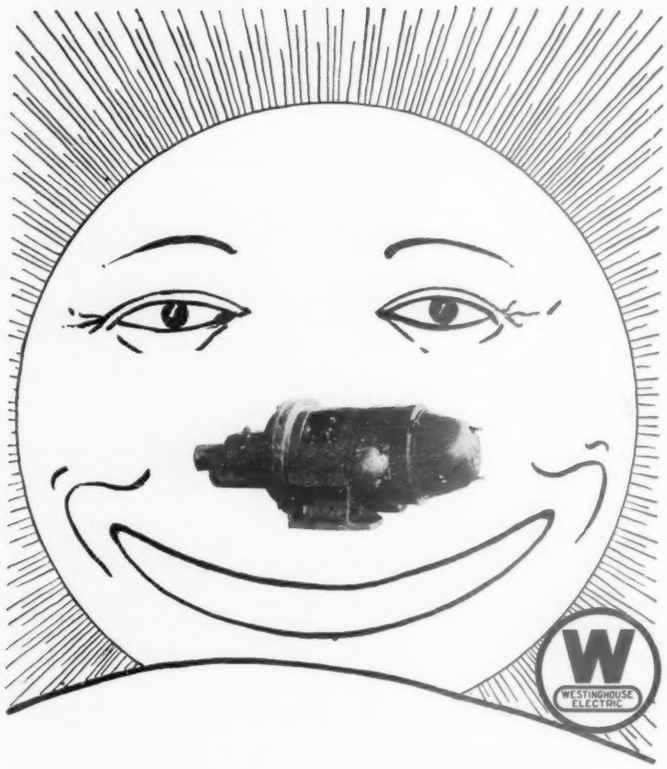


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## GULF COAST FIELDS

(Continued from Page 44)

around 800 bbls. by heads. On the east side, the Sinclair Oil & Gas Co.'s No. 2 Davidson is drilling around 3,345 feet. Gulf Co.'s No. 9 Luscher is at 3,332 feet. Texhoma Oil Co. is rigging to work over No. 2 Booth on the west flank of the dome, and Navarro Oil Co.'s No. 1 Robinson is a location.

Gulf Production Co. has two rigs running in the Big Creek Pool, 7 miles south of Richmond, and is rigging No. 8 Moore in the Orchard district, northwest of Rosenburg. At Long Point, a prospect, between Big Creek and Damon Mound, Gulf Production Co.'s No. 15 Davis is drilling at 2,840 feet, No. 16 Davis at 876 feet and No. 17 Davis below 1,104 feet in cap rock. Ryeade Petroleum Corp. is rigging No. 9 Wisdom in the Nash Pool.

### Other Pools

At Barber Hill, in Chambers County, Mills Bennett and Humphrey's Corp.'s joint Nos. 2-B Kirby and 4 Barber. Barclay & Meadow's No. 3 Barber is also drilling. Humble Oil & Refining Co. has a location for No. 4 Myers.

At High Island, Sun Oil Co.'s No. 10 Lockhart is at 545 feet. No. 8 Cade is around 4,765 feet, and No. 11 Cade is drilling around 2,765 feet.

On the north side of the West Columbia Pool, The Texas Company's No. 82 Hogg is drilling around 1,980 feet, and No. 12 Abrams is rigging to start drilling. Hyde Production Co.'s No. 2 Masterson, on the northeast side, is at 2,178 feet.

Outside of the pools, the Valley Oil Co. abandoned No. 1 Thompson, in Austin County, at 1,150 feet. Bancroft and others abandoned No. 1 Elena in Harris County at 3,700 feet. Texas Little Farms Association quit No. 1 in Hardin County after drilling to 4,000 feet. A location has been made for No. 2, near Sour Lake.

### South Louisiana Pools

In the Vinton Pool, Gulf Refining Co.'s No. 56 Gray is making 200 bbls. at 2,450 feet.

In the Jennings Pool, Gulf Refining Co.'s No. 38 Arndault is a 200-bbl. well at 2,050 feet. Ballyard Oil Co.'s No. 3 S. F. S. is rated at 250 bbls. at 1,780 feet. R. N. Hines abandoned No. 3 Martin at 2,050 feet.

The Texas Company's No. 1 Bayne in that pool is drilling at 4,110 feet. F. I. Getty's No. 11 Chicago-Jennings is fishing at 1,300 feet. Jennings Oil & Gas Co.'s No. 1 Pierce is drilling around 2,935 feet, with No. 2 waiting on a rig. General Petroleum Co.'s No. 6 Fontenot is at 1,565 feet. Utopal Oil Co.'s No. 1 Noble is drilling around 1,655 feet.

In the Edgerly Pool, Edwards Oil Co.'s No. 4 Landry is rigging. Rex Petroleum Co.'s No. 3 Hunter is drilling around 3,785 feet. C. M. Crott's No. 14 Lilliard is fishing.

In the Lockport Pool, Vacuum-Gulf Co.'s joint No. 1 Bayou D'Inde is drilling around 3,700 feet, and No. 2 is at 1,545 feet. No. 4 Farquhar is at 3,890 feet, and No. 3 Fredberg and Wolf is at 455 feet. No. 8 Miller is working over. No. 10 Miller is drilling below 5,400 feet, with a location for No. 12. No. 4 Lock-Moore is drilling around 6,000 feet. It is the second deepest hole, the first going to 6,111 feet before quitting. A derrick is up for No. 4 Bordages.

The United Oil & Gas Syndicate of New Orleans has started a test on the northeast side of the salt dome at Jefferson's Island, Iberia Parish. The location is near an oil seepage which was recorded on maps by Captain Lucas, of Spindletop fame, in 1903 and verified by R. B. Thacker, a Houston engineer, this year. The United Oil & Gas Syndicate has been doing exploration work around the dome for three years. It has drilled seven tests, all below 4,000 feet, on the east, south and west sides, as follows: Nos. 1 and 2 LeBlanc, No. 1 Landry, No. 1 Bayless & Jones, No. 1 Loughridge, Nos. 1 and 2 Salt Mine.

Benedum & Trees' No. 1 Hirsch, on the northwest side of the Humble Pool, is drilling around 1,800 feet. It is the firm's second test in the Coastal region, a wildcat southwest of Humble having been abandoned last month. W. F. Martin's No. 11 Butler and George Harris' No. 2 Core are drilling.

### Coastal Wildcats

Brazoria County: Clemens Dome, Roxana Petroleum Corp.'s No. 1 Pabst spudded in; No. 3 Clemens, drilling below 2,345 feet; No. 1 Bernard, river location. Allen Dome, No. 3 Allen drilling around 2,235 feet; No. 1 River, derrick up.

Jefferson County: Fannette Dome, Gulf Production Co.'s No. 2 Bordages drilling at 4,970 feet; No. 9 Thomas drilling around 2,855 feet. Near Westbury, Port Arthur Development Co.'s No. 4 drilling at 875 feet.

Brazos County: J. A. Germany's No. 1 Vick drilling at 985 feet.

Harris County: Kelly and others' No. 1 Lipper drilling around 3,200 feet.

Sabine County: The Texas Co.'s No. 1 Bell spudded in.

Orange County: E. W. Ogden's No. 1 Stark, location.

Chambers County: Osage Oil Co.'s No. 1, south of Moss Bluff, drilling at 565 feet. Roxana Petroleum Corp.'s No. 1 Moss Bluff location.

Forbes & Gray's No. 1 Kyser, 5 miles east of Marlin, Falls County, bailed dry in the Edwards lime at 2,225 feet. This test drew much attention and attracted scouts and lease speculators on reports of a showing. A large amount of acreage changed hands at from $40 to $50 per acre.

In the Rockdale-Minerva shallow section of Milam County, the Bowman Oil Co.'s No. 8 Gaither is drilling. Other drilling wells and rigs are as follows: W. A. Jones No. 6 Phillips, Smith & Lowenstein's No. 1 Allen, Coffield & Hale's No. 1 Dees, Fritz Fuchs' No. 3 Seidle, Caudle and others' No. 2 Luetge, Triangle Oil & Gas Co.'s No. 5 Coulter, J. G. Gross's No. 9 Chambers, Jennings Oil Co.'s No. 1 Ehlers.

## FARMINGTON, N. MEX.

(Continued from Page 51)

the production string, as it is confident production will be encountered in a short distance after drilling is resumed. Frank Weber, who drilled 12 wells on the Hogback Dome for the Midwest Refining Co., about 25 miles west of the Congress, most of which were producers, is in charge of the drilling and states the prospects, judging from the log of the well, are as good for production as any well he has observed in this county.

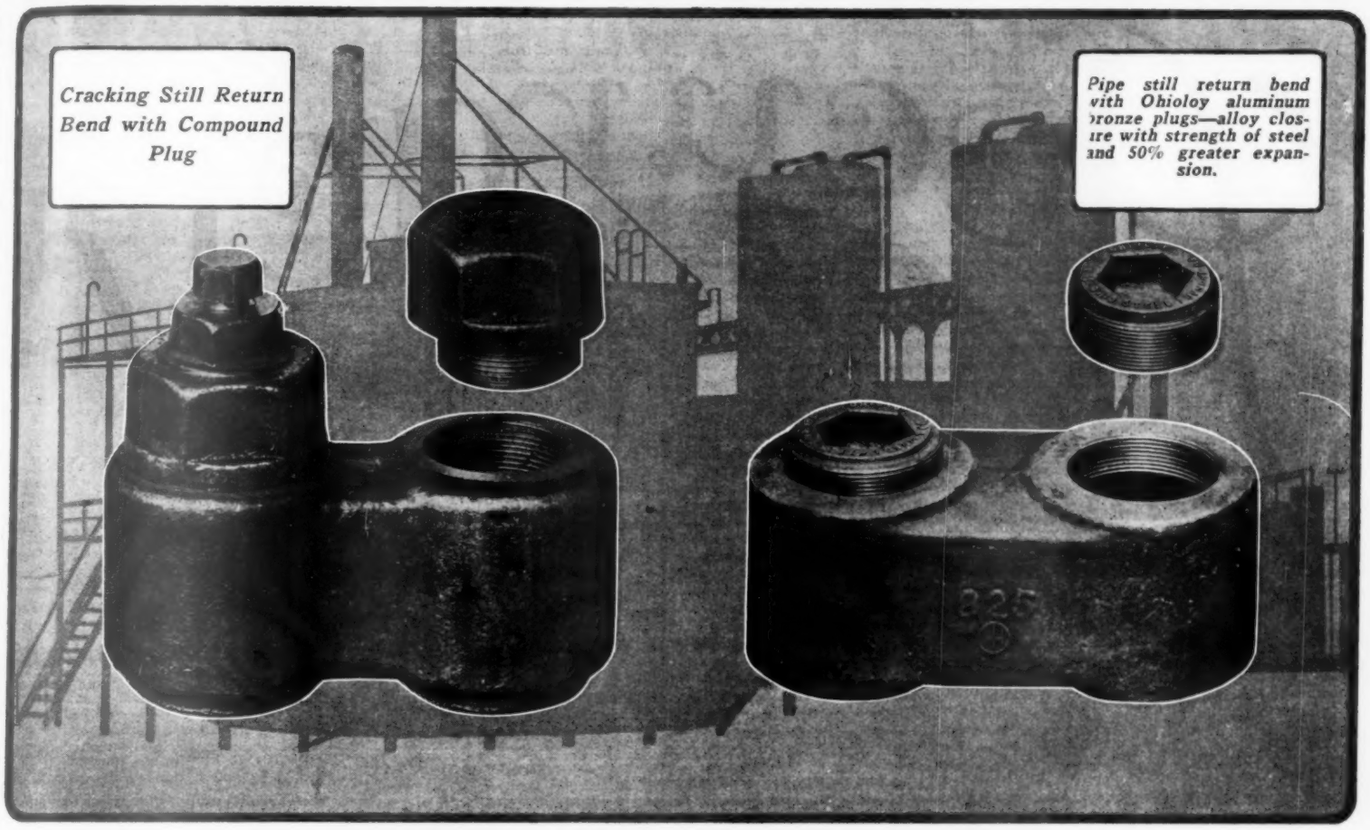
The Portage Oil & Gas Syndicate, drilling on the Glade structure, 6 miles northeast of Farmington, Section 24-30-13, is still drilling on the two joints of casing at the bottom of the hole which it was unable to pull. It is trying to sidetrack them, but the work is slow.

W. R. Childers, operating in the Ute pasture district on No. 1 Ute, resumed operations last week after several months' delay and found 1,000 feet of oil had accumulated in the hole during the delay. This was bailed out and is being used for fuel. This well is no longer connected with the Ute Consolidated Oil & Gas Corp., but is again entirely in charge of W. R. Childers and associates. The Ute Consolidated, in the division of interests, took over the Mancos structure, and R. R. Burke has charge of operations there.

### Rattlesnake Structure

The Continental-Santa Fe companies, operating on the Rattlesnake structure 30 miles west of Farmington, Section 2-29-19, are drilling on No. 17 the deep test, and have reached a depth of 3,485 feet and are running 6¼-inch casing. In No. 19 they have mudded off the production in the upper sand and have cemented in the casing at a depth of 847 feet. This is to test the lower Dakota sand.

The Continental Oil Co., operating on the Table Mesa structure 25 miles southwest of Farmington, Section 3-27-17, drilling on No. 10, failed to get satisfactory production in the upper Dakota sand and is going down to the second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Dakota and now drilling at a depth of 1,390 feet.

The Marland Oil Co., which purchased the Chimney Rock structure at the last Navajo lease sale, has arranged with the Continental Oil Co. to drill the first well on contract, and the location has been made on Section 34-31-17, and the derrick had been erected when a heavy wind blew it over, destroying much of the work. Drilling will start as soon as the rig is in shape.

The E. J. Miley interests, operating on the Red Mesa structure, Section 32-33-12, are again drilling after running casing, and at last report was near the 1,000-foot depth. They have the heaviest flow of gas yet encountered in any well on this structure.

Timbers for a rig for another well on this structure are being assembled about 7 miles northwest of the Hall well. It is reported that California parties are to do the drilling and a rig is being shipped from that State to Gallup for that purpose.

## SOUTHWEST WILDCATS

(Continued from Page 48)

in the south half of Porcion No. 80, 5 miles north of the river and 3,200 feet from the east line of the Porcion. McCarley & Heard have a derrick up in Survey 918 and Bill Pearson and others will drill in Survey No. 933. Both of the last two named have the derricks up.

**Duval County**

Daniel & Best, Block 1, have derrick up for No. 1 Benavides, previously reported No. 1 Taylor. Test is 150 feet from the west line, and 300 feet from east line. Buffum and others' No. 1 J. Benavides, Block 38, has spudded in 150 feet from the east line and 660 feet from the west line. O'Hern & Seacord's No. 2 Benavides, Survey 174, Block 12, is drilling at 1,060 feet. Test is on same block with No. 1 Benavides, which came in for 50,000,000 feet of gas and spraying oil, and was thought to have opened a new oil pool. Humble Oil & Refining Co.'s No. 10 Singer in the northern end of Survey 4, is drilling at 616 feet, and No. 4 Schallert in Survey 255, is drilling at 3,052 feet. Humble-Reiter-Foster's No. 1 Kohler, Survey 406, is drilling water well, and is ready to spud in. Location is 660 feet from the south and east lines, and on Survey 168. No. 2 Kohler, 1,320 feet from the south and east lines, is drilling. Simms Oil Co.'s No. 1 Schallert, Survey 241, is at 3,752 feet. No. 2 Dinn on Survey 62, 450 feet from the south and east lines, drilling by Simms Oil Co., tested fresh water at 2,710 feet. George M. Ball's No. 1 Roach, in center of Survey 463, is drilling at 3,224 feet. National Refining-Lewis Oil Co.'s No. 1 Dinn, Survey 668, has spudded in 200 feet from the east and south lines. Houston Oil Co.'s No. 1 Beale, 12 miles north of San Diego in Survey 571, is standing at 2,449 feet having tested salt water.

**Jim Hogg County**

Moody Oil Corp.'s No. 1 Palacious, Block 13, Survey 287, is standing in hard rock at 1,600 feet. Hazlitt-Simmons' No. 1 Schroder, Block 10, Survey 16, is drilling at 1,764 feet. It is 150 feet from the north and west lines. Hoad and others' No. 1 Palacious, Block 247, is drilling at 1,920 feet, 150 feet from the south and west lines. O'Byrne and others' No. 1 Palacious, SW 40 acres of Block 14, is drilling at 1,570 feet in rock. Humble Oil & Refining Co.'s No. 1 Vala, Block 5, Survey 5, has set surface casing at 205 feet, 660 feet from north line and 150 feet from east line. L. M. Holden's No. 2 Jones at 3,150 feet plugged back and tested fresh water and is drilling deeper. T. G. Shaw interests have made location for No. 1 Holbien, on Block 21, 1,319 feet from the west line and 1,922 feet from the south line.

**Webb County**

Cole Petroleum Co.'s No. 9 "A" Benavides, Block 7, Survey 753, tested salt water at 2,865 feet and is standing and No. 10 "B" Benavides, Block 5, Survey 3, is drilling at 3,700 feet, 150 feet from the southeast line and 275 feet from the northeast line. W. A. Wheatley and others' No. 1 Reiser, Block 7, Survey 1,618, NW cor., is drilling at 1,236 feet. Hadley-Marland's No. 1 DeSpain, Survey 49, NE SW, is drilling at 2,106 feet. C. O. Maddox and others' No. 1 Laurel, NE SW NW, Survey 333, tested salt water at 2,888 feet. Test will go to 3,000 or 3,500 feet. Magnolia Petroleum Co.'s No. 1 Neal, Block 12, Survey 132, 5 miles southwest of the Cole Field, is drilling at 3,320 feet, and No. 1 Paige-Garcia, Survey 611, 150 feet from the west corner of Survey 139, is drilling at 1,775 feet. In Survey 10, Trees Oil Co.'s No. 1 Billings, 163 feet from the west line and 2,146 feet from the south line is drilling at 2,140 feet. Lane-The Texas Company's No. 1 in the city limits of Laredo is drilling at 2,930 feet. Henne, Winch & Killam have made location for No. 1 Billings, NE SW, Survey 43.

**Brooks County**

Ballard & Underwood's No. 1 Lasater, Survey 331, south of Laguna Salado on Falfurrias Salt Dome, has resumed drilling.

**Caldwell County**

Swearingen & Richards' No. 1 W. J. Tiller in the Luling Field at a depth of 2,125 feet made 75 bbls. daily. Near the Callihan well on the North & South, Fred Adams' No. 1 Kelly is fishing at 2,230 feet and will likely lose the hole. Reiter-Foster Oil Corp.'s No. 1 Riddle is rigging up.

**Concho County**

Nullins, Davis & Davenport, 5 miles northwest of Eden, SW Section 6, is rigging up. Four miles north of Eden, Elliott, Chandler & Lewis' No. 1 White & Ledbetter, C NE cor. Survey 2, has rig en route for test.

**DeWitt County**

Empire Southern Oil Co. is preparing to resume operations in the No. 1 C. G. Smith, west of Cuero, and will spud in within a week.

**Fayette County**

G. W. Page and George W. Zeigin are preparing to resume drilling on the No. 1 Rosa Russek, 1 mile northwest of Schulenberg after being shut down since August 8, 1926.

**Guadalupe County**

J. M. Davis' No. 1 Rosenbrock on the Payne & Bond block in Guadalupe County is drilling at 1,230 feet. Well bailed a little oil at 741 feet but not enough to make a commercial well.

**LaSalle County**

DeLange, Eiser Development Co.'s No. 1 fee, Survey 102, is at 1,445 feet in hard packed sand. Test is 600 feet to east line and 1,800 feet to south line.

**Medina County**

Wharton and others' No. 1 Fohn, east 100 acres of Survey 115, had split casing pulled and reset and will test.

**Maverick County**

Humble Oil & Refining Co.'s No. 1 Hanchett, half a mile west of Dimmitt County line, is drilling at 1,370 feet.

**McMullen County**

George M. Ball's No. 1 Kuykendall, Block 7, G. C. & S. F. R. R., 300 feet from the south line and 600 feet from the east line, is to resume drilling at 1,000 feet.

**Starr County**

Ramsey-Maxey Oil Co.'s No. 1 Kelsey, Porcion 76, is drilling at 2,100 feet. Simms Oil Co.'s No. 1 Salinas, Porcion 80 and 81, Block 6, is moving on.

**Zapata County**

Earl K. Bateman, in center of county, Block 7, Survey 617, in his No. 1 Garcia is underreaming at 1,700 feet, total depth 2,139 feet. Magnolia Petroleum Co.'s No. 1 Cueller, Survey 278, is drilling at 2,735 feet. Test is 150 feet from the north line and 2,260 feet from the east line. The Texas Company's No. 3 Jennings, Cerrito Blanco Survey, is drilling in sticky shale at 3,703 feet.

## ARTESIA, NEW MEXICO

(Continued from Page 40)

ging back No. 1 Vandagriff permit, Section 15-17-28, to the gas sand at 1,300 feet. An effort will be made to pipe this gas into Artesia for fuel purposes.


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The Williams Petroleum Co. of Los Angeles has started No. 5 well in Section 17-18-28. Near Roswell, the Gibson Oil Corp. will skid its rig 50 feet to the north, and a new hole will be started. This was made necessary due to a crooked hole and cavings.

**Eddy County**

Compton's No. 2 Mann permit, Section 3-18-27, shut down; Cook-Ironside No. 1, Section 10-20-29, shut down at 2,040 feet; Decum Development Co.'s No. 1 Vandagriff permit, Section 5-17-28, plugging back to 1,300 feet; Empire Oil & Gas Co.'s No. 1, Section 2-18-27, location; Flynn-Welch & Yates No. 3 Dunn permit, Section 10-18-28, drilling below 2,100 feet; No. 10 producer in Section 29-18-28, to be drilled to 2,700 feet; No. 52, Section 28-18-28, drilling below 600 feet; Hamilton Petroleum Co.'s No. 1 Billings, Section 12-19-26, waiting for cement to set; Hasenfuss & Donley's No. 2 Keyes, Section 13-18-28, cleaning out after shot from 2,653-97 feet; Henderson-Dexter-Blair's No. 1, Section 9-19-28, repairing derrick hole down 2,100 feet; Levers-Carper's No. 4, Section 3-18-28, drilling below 1,800 feet; Merriwether and others' No. 1 Goodale permit, Section 19-18-29, fishing at 2,375 feet; Navajo Oil Co.'s No. 2, Section 28-17-28, drilling below 850 feet; Ohio Oil Co.'s No. 7 Toomie-Allen, Section 28-18-28, drilling 1,150 feet; Phillips & Welch's No. 1, Section 35-17-28, cleaning out after shot; Phillips & Welch's No. 1, Section 18-18-28, drilling 1,300 feet; Pueblo Oil Co.'s No. 1, Section 33-17-28, oil sand from 1,988-97 feet to drill deeper; Rehn and others' No. 1 Winans, Section 15-18-26, drilling at 2,325 feet; Swartz-Compton-Eaton's No. 1 Brainard permit, Section 5-18-27, drilling water well; Sun Oil Co.'s No. 1, Section 21-25-30, drilling 2,225 feet; Skelly Oil Co.'s No. 1 Lynch permit, Section 22-17-31, capped; Bruce Sullivan No. 1 Lodewick permit, Section 1-18-31, shut down at 2,540 feet to set casing; William Petroleum Co.'s No. 5, Section 17-18-28, drilling 400 feet; Wooley-Jones's No. 1 Beeson, Section 33-17-30, drilling at 3,200 feet; Wooley-Jones's No. 1 Danciger permit, Section 21-17-30, building derrick.

**Chaves County**

Buffalo-Roswell's No. 1, Section 25-11-27, shut down at 3,775 feet; Colorado Gas & Fuel Co.'s No. 1, Section 16-8-27, shut down at 5,040 feet; Etz-DeVito's No. 1, Section 24-11-25, drilling at 735 feet; Gibson Oil Corp's No. 1 Forsyth, Section 8-11-23, shut down at 690 feet; Hall and other's No. 1, Section 8-14-24, drilling below 750 feet; Rogers and others' No. 1 Purcell Sloop, Section 14-11-26, on pump; Sparrow & Drake's No. 1 Fahrlander, Section 11-6-27, shut down at 650 feet; The Texas Company's No. 1 Duncan Dome, Section 29-17-18, drilling below 1,900 feet.

**Lea County**

Cap-Rock Oil & Gas Corp.'s No. 1, Section 11-16-32, drilling with rotary at 200 feet; J. S. Covert's No. 1, Section 15-21-33, shut down at 1,100 feet; San Angelo Exploration Co.'s No. 1, Section 25-19-35, rigging up; Henderson-Dexter-Blair's No. 1 Wyatt permit, Section 34-17-33, drilling at 450 feet; Ingelfield & Bridges' No. 1, Section 4-17-34, fishing at 1,385 feet; Maljamar Oil & Gas Corp.'s No. 1 State acreage, Section 16-17-32, spudding; No. 1 Grace Mitchell permit, Section 5-17-32, fishing at 600 feet; Mescalero Petroleum Co.'s No. 1 Hughes, Section 27-19-38, drilling; T. P. McDonald's No. 1, Section 22-18-34, shut down at 200 feet; Ohio Oil Co.'s No. 1 William Mitchell permit, Section 18-17-32, drilling below 1,450 feet; Prairie Oil & Gas Co.'s No. 1 Keel permit, Section 34-18-32, location.

## MEXICAN FIELDS

(Continued from Page 39)

Nos. 184 and 186, Lot 4, are in gray lime at 1,250 and 1,715 feet respectively. In its Panuco district, La Corona's operations are as follows: No. 127 Piedras is drilling at 850 feet in shale; No. 128 Salvasuchi is in shale at 175 feet; No. 8 Chijol is in gray lime at 1,975 feet, and the three rigs are going up in various locations. Cia. Pet. Francia Mexico's No. 6-A Llomas y Llanos is in shale around 1,200 feet. International Petroleum Co.'s No. 274, Lot 5 Cacalilao, is in gray lime at 1,640 feet; its No. 282 is in shale at 212 feet. Mexican Sinclair Petroleum Corp.'s No. 18-A, Lot 2 Camolote, Panuco, is running 10-inch in gray lime at 1,572 feet. Its No. 134, Lot 3 Cacalilao, is in gray lime at 1,435 feet; its No. 136, Lot 1, is in gray shale at 136 feet. Mexican Gulf Oil Co.'s No. 18 Piedras is drilled 2,000 feet in brown lime and awaits orders. Transcontinental Petroleum Co.'s No. 231, Lot 4 Cacalilao, is in gray lime at 1,420 feet; its No. 29-A Delicias is running 8-inch in gray lime at 1,280 feet.

**At Ebano**

In the Ebano district of the northern fields, Mexican Petroleum Co. is operating as follows: Nos. 10 and 12 Ebano are spudding or preparing to spud; No. 43 La Dicha is bailing hole in the white lime at 2,365 feet; No. 102 is in white lime at 2,285 feet; Nos. 107 and 108 are each in gray lime at 1,610 and 2,055 feet respectively; No. 116 is in blue shale at 115 feet; No. 117 is in gray lime at 1,415 feet; No. 118 is in gray shale at 770 feet; No. 9 Mendez is in hard black lime with a big oil show at 1,974 feet. In the Conteca the following may be approved: No. 111 is in the gray lime at 1,880 feet; No. 113 is in the white and gray lime at 1,500 feet; No. 114 is in gray lime at 1,625 feet; No. 118 is rigging; No. 119 is in shale and shells at 115 feet; No. 18 Perez is a derrick.

And the National Lines' operations in the Ebano sector are as follows: No. 107 Conteca is in gray lime at 1,280 feet; No. 110 is 490 feet in gray shale and two locations are rigging.

**In the South Fields**

In the South Fields Huasteca Petroleum Co.'s No. 74 Tierra Blanca is in gray lime at 2,015 feet; No. 76 is in gray shale and shells at 1,750 feet; No. 80 is in gray lime at 2,030 feet; No. 82 is in blue shale at 110 feet; and down in Chapopote Nunez No. 16 is in hard gray shale at 600 feet. Cortez Oil Corp.'s No. 13 in the Aguada is in black sandy lime at 1,658 feet. International Petroleum Co.'s No. 53 Toteco is in sticky shale at 2,018 feet. Mexican Eagle Oil Co.'s No. 11 San Diego is in blue shale at 100 feet; its No. 51, Lot 132 Chinampa, is in shale and gumbo at 1,327 feet; its No. 2 Poza Rica is in hard gray shale at 2,167 feet.

**Northern Miscellany**

Among the miscellaneous northern groups may be mentioned the following: In the Limon, Cia. Pet. Franco Espanola (Marland) No. 67 is rigging standard tools; Nos. 68 and 69 have each cemented 10-inch casing at nominal depths for surface casing, and No. 70 is in gray lime at 1,355 feet.

In Quebrache, Globe Petroleum Co.'s Nos. 1 and 9, Lot 80, are 2,145 and 2,737 feet respectively, the former in gray shale and the latter in lime shells.

In the Federal zone of the Altamira, National Lines' No. 55 is 350 feet in shale, and its No. 63 is in gray lime at 2,005 feet. In the Panuco River zones its No. 57 Estero Grande is in shale and gumbo at 806 feet, and its No. 84 Halcon is in gray lime at 2,300 feet.

Rich Mex Oil Co.'s operations in the Altamira district follow: Its No. 2, Lot 26, is in gray lime at 1,265 feet; its No. 6 is in gray lime at 1,135 feet. And, in Corcovado, its No. 6-D is in gray lime at 2,205 feet.

**New Company**

The Two Oceans Oil Co. has recently been organized, a Delaware corporation. J. B. Warden, who has had success in the Panuco Field and holds some production there, is manager of the new company. Its other officers are: James Barnes, president; P. S. Jones, secretary and treasurer.

## HALF DOZEN TESTS ARE DRILLING DEEPER

(Continued from Page 44)

feet. Casing was set in No. 8 at 3,375 feet. No. 9 is below 3,500 feet and No.

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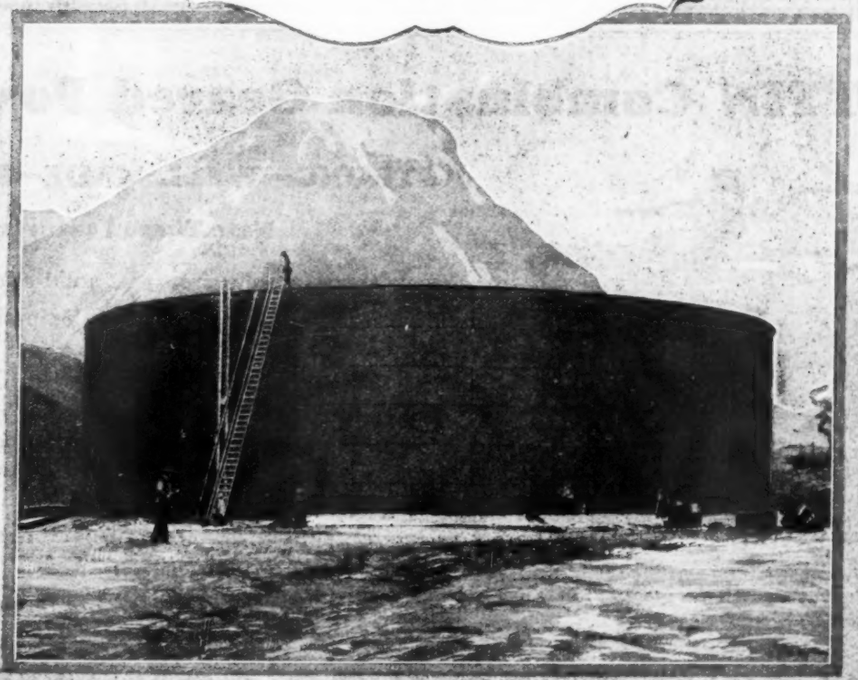

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been made for Nos. 8 and 9. No. 51 is at 2,300 feet and No. 52 is at 3,010 feet. The two latter are located between the first two wells drilled on the right of way.

The Magnolia Petroleum Co.'s No. 1 fee on its tank farm, the most southerly test in the west pool, is drilling around 3,500 feet. W. B. Flynn's No 1 Gladys is fishing. The Deep Sand Oil Co.'s No. 1 Howell is changing rigs at 3,510 feet. Ross Combest's No. 1 Ewing & Ring is idle at 3,350 feet. The Unity Oil Co.'s No. 90 McFaddin is at 2,030 feet. A derrick is standing for the Kinnear Oil Co.'s No. 1 Gladys. Hines and others' No. 1 Ewing & Ring is drilling around 4,000 feet. A location has been made for Seiss and others' No. 1 Pierce The Grayburg Oil Co.'s No. 1 McLean is at 3,465 feet. Paggi & Co.'s No. 3 Gordon is drilling at 3,815 feet. The Walker Oil Co.'s No. 1 Quinn is at 3,870 feet. Rush and Pittman's No. 1 Hammons is at 3,919 feet. W. C. Turnbow's No. 2 Banks is a location. The Favorite Oil Co.'s No. 1 Weed is shut down at 4,275 feet.

The Sun Oil Co.'s No. 1 Price is at 3,545 feet. On its McLean lease No. 3 is drilling at 3,400 feet, No. 4 at 3,235 feet, No. 6 at 765 feet and No. 7 around 3,200 feet, with a derrick standing for No. 5. The New Beaumont Oil Co. (Barbee and others) No. 1 Garrick, north of production, has installed a heavier rig and resumed drilling from 2,650 feet.

Late in the week the Gulf Production Co.'s No. 3-A Weed, deepened from 2,800 to 3,000 feet, came in flowing 3,000 bbls. It was followed by the Yount Lee Oil Co.'s No. 12 McFaddin on the southeast side, flowing 4,500 bbls. through a choker at 2 971 feet, 23.4 gravity. The well showed initial output of 8,500 bbls. before it was pinched in. It is the first completion on the southeast side in a month. The Yount Lee Oil Co. has all the acreage on that side leased, aggregating some 5,000 acres, but the development work has been confined close to the edge of the salt and cap rock area of the original district.

These wells and one at Sour Lake make the new production in the Coastal pools for the week of September 25 reach 31,536 bbls.

## OKLAHOMA FIELDS

(Continued from Page 40)

3, and No. 3, NE cor. SE, is a rig; Skelly Oil Co.'s No. 4 Smith, SW cor. NW SE, Section 3-2-3, rig; Magnolia Petroleum Co.'s No. 1 Pollock, SW cor. SE, Section 14-1-3, is a location; Humble Oil & Refining Co.'s No. 7 Lusk, NW cor. SE NE, Section 33-1-3w, drilling at 1,203 feet; Magnolia Petroleum Co.'s No. 5 Newstadt, NW cor. SW SE, Section 34-1-3, drilling at 650 feet.

**Stephens County**

Walker Valley Oil Co.'s No. 4 Schick, CSL SW NE, Section 27-1-8, sand at 1,675-84 feet, made 12 bbls. naturally; Carter Oil Co.'s No. 1-A Taliferro, SW cor. SE, Section 28-1-8, sand at 2,760-65 feet, 250 bbls.

Cobb & Beard's No. 2 Skelly-Birgham, SW cor. SW SW, Section 30-1-8, is a rig; Ellis Drilling Co.'s No. 1-A Nigh, C SE SW NW, Section 34-1n-8w, rigging up rotary; Medlin and others' No. 1 Burkes, NW cor. NE, Section 34-1-8, drilling at 1,340 feet.

## KANSAS FIELDS

(Continued from Page 40)

ing CNL SW NW NE, Section 17-22-10, rig building; Rhodes and others' No. 7 Browning, CSL SW NE SE, Section 18-22-10, rig; Sinclair Oil & Gas Co.'s No. 49 Browning, C SW, Section 20-22-10, location; Empire Gas & Fuel Co.'s No. 16 Kipfer, C NW NW SE, Section 11-22-11, location; same company's No. 14 Fromme, C NE SW NE, Section 14-22-11, location; Mid-Continent Petroleum Corp.'s No. 12 Clopton, C NW NE SW, Section 18-22-11, location; York State Oil Co.'s No. 16 "B" DeMalorie, C NE NW SW, Section 32-22-11, rigging up; Mid-Continent Petroleum Corp.'s No. 2 Fankhouser, C SE SE SW, Section 4-22-11, rig up; Balliere and others' No. 1 Boles, C SE SE NW, Section 15-22-12, location; Nolan and others' No. 1 Clark, C SW SE SW, Section 15-22-13, a location; Braden Brothers & Darby's No. 1 Wagler, SE cor. SW SE, Section 22-22-13, rigging up; Leonard Petroleum Co.'s No. 1 Bell, C SW NE NW, Section 1-23-10, rig on the ground; Roth Faurot & Phillips' No. 2 Smith, C NE SW SW, Section 10-23-10, drilling at 1,040 feet; Schwartz and others' No. 2 Esther, C NE NE SW, Section 36-23-10, rig on the ground; The Texas Company and Simmons' No. 1 "B" Edwards, C SE NW SW, Section 16-23-11, machine in; same operators' No. 1 E. Edwards, C NE SW SW, Section 16 23-11, a rig on the ground; Jennings Brothers' No. 1 Kipfer, C NE NE SE, Section 17-23-11, rig on the ground; York State Oil Co.'s No. 1 Patterson, C NW NW NW, Section 36-23-11, rig on the ground. Parrish and others' No. 1 Patterson, C NW NW NW, Section 29-23-12, location; Callahan & Ainsworth's No. 1 Inthrum, SE cor. NE SE NE, Section 4-23-13, location. Theta Oil Co.'s No. 24 Schneider, C NW NW Section 10-23-13, rigging up machine; Hayden & McCollough's No. 1 Dibert, SE cor. SW NE, Section 22-25-10, location; Griffith and others' No. 1 Snyder, C NE SE NW, Section 7-25-11, location; Bisagno and others' No. 1 Stockel, C NE NE NW, Section 6-25-13, machine in; Brown & Emerson's No. 1 Hughes, SW cor. Section 16-26-11, location.

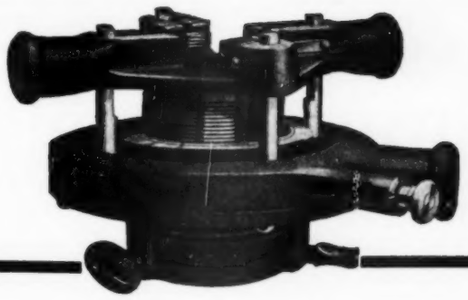
**Completions in Summer**

The Roxana Petroleum Corp.'s No. 1 Rutter in the C SW SW NE, Section 25, started at 538 bbls. a day when sand at 1,835-85 feet had been shot with 40 quarts, and is No. 1 Van Sickle, C NW NW SE, Section 25-31-2e, which got sand at 1,842-85 feet, shot with 40 quarts, swabbed 800 bbls. the next 24 hours. No. 2 Van Sickle, CWL SW NE SE, Section 25, started at 700 bbls. a day from sand at 1,854-85 feet. In this same township, the Roxana Petroleum Corp. was underreaming at 3,350 feet in No. 1 Clodfelter, C SE SW NW, Section 22, and was drilling No. 2 Churchill, C SE NE SW, Section 25, at 1,120 feet, and No. 3 Churchill, C NE SE SW, Section 25, at 1,260 feet. The Roxana Petroleum Corp. made a location for No. 1 Arkansas Riverbed, SE cor. NW SW, Section 25. The Wentz Oil Corp.'s No. 1 Herrick, C NW SW SE, Section 25, was drilling at 1,560 feet.

The Meridian Oil & Gas Co.'s No. 1 Hunt, C SW SW, Section 15-30 2w, was abandoned at 2,185 feet, a hole full of water. The Cosden Oil & Gas Co.'s No. 1 Riner, NW cor., Section 36 30-2w, was fishing at 3,758 feet. The Champlin Oil & Refining Co. was drilling at 2,330 feet in No. 1 Kelly, C SE SE SE, Section 19-30-2w. DeHart and others were drilling below 1,930 feet in No. 1 Wirth, C SW SW NW, Section 25-32-1e.

In Township 32-2e, Indian Territory Illuminating Oil Co.'s No. 1 Morris, C SW SW NE, Section 17-32-2e, which was drilled to a total depth of 3,696 feet, was good for 150 bbls. initial production from sand at 3,644-74 feet. The Roxana Petroleum Corp.'s No. 1 Owens, C SE SE NW, Section 17-32-2e, was shot with 10 quarts in sand at 3,658-82 feet and made 134 bbls. the first 24 hours. The Twin State Oil Co. was pulling the big pipe in No. 1 Hartsell, C NW NW SE, Section 17-32 2. It was in sand at 3,637 feet, total depth 3 639 feet. Stallings and others' No. 1 Rice, C NE NE NW, Section 3-32-2e, was drilling at 3,685 feet.

The Sinclair Oil & Gas Co. has a 200-bbl. well in No. 2 Holt, C NW SE SE, Section 24-32-2e, from pay at 3,573-80 feet. The Marland Refining Co. was drilling at 3,460 feet in No. 1 Wright, NE cor., Section 9 33-2e. This well topped the sandy lime at 3,439 feet, and found a showing of oil. The Carter Oil Co. has a rig on the ground for No. 1 Holt, C NE SW SE, Section 24-33-2e. The Sinclair Oil & Gas Co. is down about 800 feet in its No. 3 Holt, C SW SE SE, Section 24. Scattered wildcats

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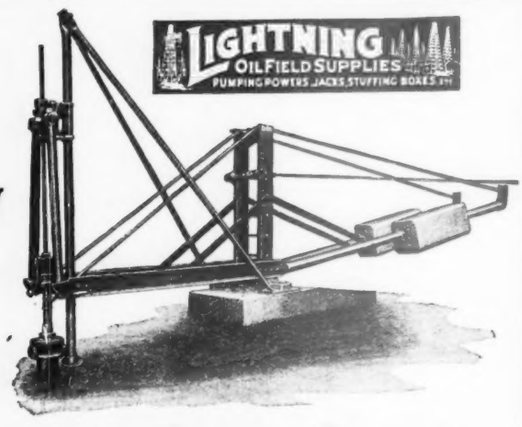


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in the county include National Union Oil Co.'s No. 1 McDaniels, C SW, Section 22-33-2w, drilling at 3,185 feet; Gypsy Oil Co.'s No. 1 Douglas, C NE SE NW, Section 23-34-2w, drilling at 2,056 feet; Amerada Petroleum Corp.'s No. 1 Hamilton, C SW SE NE, Section 18-35-1e, drilling at 2,960 feet; Broadhurst and others' No. 1 Gilbreath, CNL S half NW, Section 13-35-2w, drilling at 3,600 feet.

**Butler County**

In Butler County the Empire Gas & Fuel Co.'s No. 72 Koogler, C NE SE SW, Section 17-26-5, Eldorado Field, is a 275-bbl. well from sand at 2,510-30 feet. Basom and others have abandoned the location for No. 1 Robinson, C NE NW NW, Section 21-27-3. The Empire Gas & Fuel Co.'s No. 11 Starkey, C SW SE SE, Section 35-27-4, started at 75 bbls. from sand at 2,540-79 feet. Sheldon, Connell and others' No. 1 La Port, C NE SE NW, Section 25-27-7, was dry and abandoned at 2,740 feet. It found sand at 2,725-30 feet, but the hole filled with salt water.

Boyle and others have a rig up for No. 1 McArbin, C NE NE NE, Section 11-26-3. The Gypsy Oil Co.'s No. 1 Brown, C NW NW SE, Section 23-26-3, was drilling at 2,965 feet. It found sand at 1,770-1,805 feet. Neeley Oil & Gas Co.'s No. 1 Mulch, C SE SE, Section 33-26-3, is drilling below 850 feet. Dickinson and others' No. 1 Richards, CSL S half SW SE, Section 24-26-4, was shot in sand at 2,620-29 feet. The crew is fishing. Van Welch and others are drilling at 1,750 feet in No. 1 Dempsey, C S half SW NW, Section 11-26-4. This is in the old Towanda Field which in 1917 and 1918 was the sensation of the country. Rosenthal, Lassen and others are rigging up No. 1 Schaeffer, C NE SW SE, Section 4-27-6. It is an old well to be drilled deeper. The Phillips Petroleum Co. has rig on the ground for No. 2 Core, C NE SW SW, Section 12-27-7. There are six wells drilling in this township. Johnston and others' No. 6 Blakeman, C SE NW SE, Section 3 28-6, is a rig. The Mid-Kansas Oil & Gas Co. has made location for No. 3 Blakeman, C NW SW SW, Section 3-28-6. Shawver and others have made location for No. 1 Troutman, C SW NW SW, Section 27-29-5.

**Chase County**

In Chase County the Empire Gas & Fuel Co.'s No. Lipps, C SE NW, Section 19-18-7, was abandoned as dry at 1,502 feet.

**Coffey County**

In Coffey County Kensey and others' No. Bodley, SW cor. NW NW SW, Section 10-21-15, was drilling below 400 feet. The Arkansas Fuel Co.'s No. 1 Kaufman, C NE NW SW, Section 29-22-14, was abandoned at 1,770 feet.

**Cowley County**

The Carter Oil Co. completed a 275-bbl. well in No. 10 Waite, CSL SE NW SE, Section 19-32-3, Cowley County, in sand at 3,432-35 feet. J. A. Hull's No. 1 Wallace, C NE NE SW, Section 15-32-4, was making 290 bbls. from sand at 3,260-87 feet, but was not a completion. The Marland Refining Co.'s No. 1 Graham, C SW SW NE, Section 15-32-4, was reported at 566 bbls. from sand at 3,370 feet, drilled in one foot, but was not a completion. Sidal & Skelly's No. 1 Wallace, C NE SE SW, Section 15-32-4, was plugging back to 2,539 feet, after finding a hole full of water at 3,362-65 feet. The S. H. E. Petroleum Co.'s No. 2 Day, C SE NE NW, Section 24-34-3, was shot with 200 quarts in sand at 2,920 feet, total depth 2,965 feet, and was being tested.

Pyle and others made a location for No. 1 Beiswanger, C SW SW NE, Section 30-30-3. The Carter Oil Co. has a rig up for No. 11 Waite, CSL SE NW SE, Section 19-32-3. The Barnsdall Oil Corp. has made location for No. 1 Thurlow, C NW NW SE, Section 8-33-3. The Gypsy Oil Co. has a rig on the ground for No. 1 Becko, C NW NW SW, Section 4-34-3.

In Elk County Seeley and others are rigging up No. 3 Donnell, C SW NW, Section 12-30-9. The Pure Oil Co. has started drilling No. 12 Chaffine, NW cor. NE NW SE, Section 14-31-10. The Union Gas Corp.'s No. 18 Webb, SW cor. SE NE, Section 14-31-10, was being rigged up.

**Lyon County**

In Lyon County the Transcontinental Oil Co. completed a 100-bbl. initial producer in No. 6 Atyeo, C NE SW SW, Section 30-21-10, in sand at 2,167-2,235 feet, shot with 130 quarts. Sheedy and others' No. 14 Atyeo, C NW NW SE, Section 31-21-10, started at 50 bbls. from sand at 2,240-64 feet, shot with 70 quarts. The Emerald Oil Co.'s No. 1 Rossillion, C SW NW SW, Section 19-21-10, which showed for 10 bbls. of oil at 2,153-71 feet, was drilled down to 2,520 feet with no better results and was abandoned as a failure.

New work started in the county included McCollough and others' No. 1 J. Bradfield, C NW NW SE, Section 25-21-10, rig on the ground; Ritchey & Moore's No. 1 Bradford, C NW SW NE, Section 25-21-10, rig.

In McPherson County Fowler and others' No. 1 Anderson, NW cor. Section 3-18-2w, was drilling at 3,083 feet, with a hole ful of water.

**Marion County**

In Marion County, Youker, Propp and others' No. 2 Propp, C SW NW SW, Section 8-19-4, was spraying oil from chat at 2,360-85 feet and 2,396-2,404 feet. The Watchorn Oil & Gas Co. has a rig up for No. 2 Ebristodt, C SE SW NW, Section 23-22-4. Cameron Brothers were shut down with a hole full of water at 2,720 feet in their No. 1 Colbeck, SW cor. Section 1-22-3.

**Morris County**

The Alta Vista Oil Co. has a rig up for No. 1 Blank, C SW Section 5-14-8, Morris County. Nicoll and others were drilling below 700 feet in No. 1 Carey, NE cor. NW, Section 5-17-7, and were drilling below 400 feet in No. 1 Manguel, SW cor. SE, Section 6-17-7.

**Reno County**

In Reno County Hopper and others were cementing at 4,270 feet in their test on the Stevens farm, NW cor. Section 7-26-4w. There are eight operations, six of which are active in this county.

**Rice County**

In Rice County, Pryor & Lockhart had reached a depth of 3,570 feet in their No. 1 Deed, NE cor. SW NE, Section 1-19-7w. The Phillips Petroleum Co. has made location for No. 2 Harder, C NW SE NW, Section 35-20-6w and

## SAGINAW OIL WELLS AVERAGE 15 BBLS.

**By Whit**

SAGINAW, Mich., Sept. 27. — Daily production of oil in the Saginaw Field has risen to approximately 450 bbls., according to figures and estimates furnished during the past few days by owners and operators of completed wells, which number 30. Not all wells are on the pump yet and in that case they are estimated as their showings warrant when completed. This would make an average of 15 bbls. to the well, which is an excellent average for production from the Berea sand.

The Saginaw Prospecting Co., with 13 completed wells, is reported to have a daily production of 190 bbls. The Bliss Petroleum Co. has about a 94-bbl. production from four wells, while the Sun Oil Co.'s five wells are estimated at 51 bbls. daily. Other wells completed show close to 115 bbls., and the estimates of those not producing is said to be conservative.

The smallest producer in the number of completions is the Sun Oil Co.'s No. 1 on the Stelzriede farm, the farthest producer to the north in the field, which is estimated at 2½ bbls.

The Kruscka well of the Saginaw Prospecting Co. is reported flowing 25 bbls. daily. The well is being put on the pump and expectations are for a larger production.

Miller Wallstein Syndicate has a rig on the ground for No. 3 Wallstein, CSL SE NW NW, Section 3-21-6w. The Phillips Petroleum Co. was drilling in its No. 1 Welch, C SW SE NW, Section 35-20-6w. Top of the chat at 3,373 feet, drilling at total depth of 3,414 feet.

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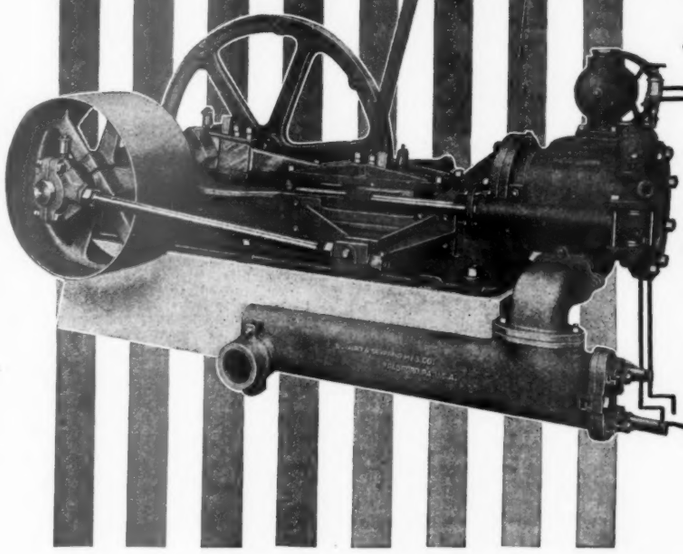

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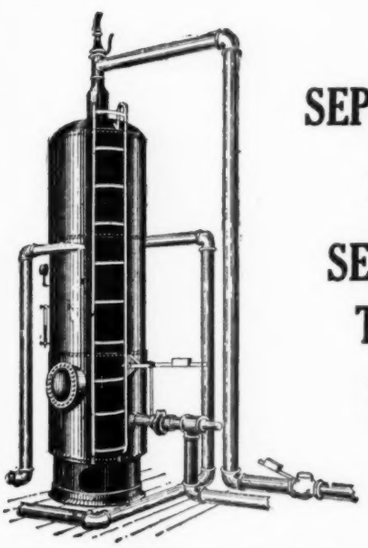

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WILL BUY producing royalties direct from owner; send complete information first letter. R. H. Manning, Dan Waggoner Bldg., Fort Worth, Tex.

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CASING and drilling machines for sale.
300 ft. 16" 65-lb. casing.
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2,300 ft. 5⅞" 17-lb. casing.
All in good shape, used in one well.
2—No. 27 Star drilling machines.
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With mounted boilers and tools.
Cash f.o.b. cars.
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10,000 each size.

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Two miles 60-pound first-quality relaying rails.
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SURVEYOR AND DRAFTSMAN, capable of taking charge of field and office work; 9 years oil field experience, with major companies. Best of references. Box B-511, The Oil and Gas Journal, Tulsa, Okla.

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CAPABLE MAN having dealt heavily with practically every major producing company in the Mid-Continent, Texas and Louisiana fields, desires new connection with a recognized leader. Pipe, big storage, derricks or tank cars preferred. Successful organizer, distributor and handler of credits. Want protection, assistance and large possibility. Willing to demonstrate and Furnish AAAA-1 references. Box B-501, The Oil and Gas Journal. Tulsa, Okla.

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## Please Answer This Letter

Sept. 27, 1926.

CLASSIFIED WANTS DEPARTMENT,

The Oil and Gas Journal,

Tulsa, Okla.

Gentlemen:

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Thanking you for any assistance you may render me in this regard, I am

Yours very truly,

*(Name withheld by request)*

**Answer the above letter through the Classified Wants Section. Send your ad now so that it will be in next week's issue where the company will see it.**

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Wanted to represent us in open territory. Good commissions.

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DERRICK PUBLISHING CO.
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HUNDRED Hunting Hounds cheap. Supplies. Catalogue. Kaskaskennels, Herrick, Ill

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Tulsa, Oklahoma

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HAVE 2,000 acres in solid block, 12 miles southeast of Mexia, Limestone County, Texas, for drilling contract. T. O. Lofland, Richland, Tex.

PATENTED OIL SHALE LANDS

For Sale — We have large block patented oil shale land located on railroad and water; good location, good shale and good price. Winchester & Modesitt, Steel Bldg., Denver, Colo.

TREMENDOUS PROFITS

On small investments; 100 to 1,000 per cent advances have been made in Nevada mining stock the last few months; we are on the verge of a big mining boom; write for free information. The Wilson Foxworthy Co., Reno, Nev.

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Factory sites on water and belt line railroad connecting with all Chicago roads, and all pipe lines, good labor market. Will assist in financing, brokers protected Our services free, free map and details.

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Promotion Dept., 105 West Monroe St., Chicago, Illinois.

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DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 117 E. 10th, Oklahoma City, Okla.

# CHICAGO SHOWS SURPRISING STRENGTH CONSIDERING CONDITIONS IN MARKET

By J. B. Waldo

CHICAGO, Sept. 25.—Considering weather conditions, the gasoline market has so far at least shown surprising strength. All have realized that this is no time for trying to force sales and while prices have declined during the week, there has been no slump. According to several refiners from the Group, stocks are far from heavy and while they would like to have more orders there has been some new business as well as considerable shipping on contracts and previous orders.

However, there has been a fair sprinkling of business. The larger distributors may have some supplies, although some have been in the market for considerable quantities, but the smaller jobbers have little gasoline and even with the present consumption they are placing orders for prompt delivery, although they are only buying for immediate needs. Distributors are relying more and more on facilities for prompt ordering and deliver of orders and are carrying smaller stocks. Without stable prices this plan has certain possibilities for greater profit on the part of the buyer who orders in advance in quantities.

Some companies state their stations are holding up fairly well. Others state their sales are running at from 30 to 75 per cent, compared with the business actually done during July and August. Under these conditions that there would be some reduction in demand for spot gasoline is only natural, but there has been some routine ordering right along and some of the larger marketers both inside and out of the city have been in the market for trainloads. One of the local cab companies has been in the market for a second order this month and reports it bought at a price stated to be 10¼ cents, the former order having been placed at 10⅜ cents and filled with north Texas gasoline. It was reported that the price of the second order was 10 cents but an official stated the price paid was 10¼ cents for Navy gasoline. He declined to say what refinery.

Many of the refiners here are asking 10¾ cents but rather than lose business will meet actual competition as low as 10½ cents. There are reports some marketers have quoted the trade 10¼ cents but that they can buy at less than that price is not confirmed, although one refiner would take business at 10⅜ cents but not for immediate delivery. One frankly admitted it had not bought at less than 10¼ cents but simply believed it would be able to if the weather continued. The higher gravities have been slow and prices unsettled but somewhat lower.

Natural gasoline has been easy in tone, the only product extensively dealt in that is selling lower than a year ago. The other products are materially higher, especially fuel oils and kerosene. One refiner stated this week that at the present prices there is good money in the business.

### Kerosene in Light Demand

Kerosene has been in light demand. Some report a fair business and others state they have done little. Supplies are much more freely offered and deliveries can as a rule be made promptly. The market is somewhat lower but not exactly soft as there will be considerable demand yet to come in the country districts. Some believe that if the fields dry out before a severe freeze stops field work it will be so late tractors will have to be more extensively employed. With not excessive supplies and the possibility of a considerable demand a little later there has been a fairly good tone to the market at prices around 8½ cents for the 41-43 gravity. There is little if any of the 42-44 gravity offered and some refiners are no longer running this grade.

### Distillate Firmest

Distillate is the firmest commodity in the list of petroleum products due to the colder weather. Some distributors have some gas oil and some distillate in stock and many have a contract for some of their future supplies but no such advance preparations as a year ago. A report that the Standard Oil Co., had by eliminating a quotation in furnace oil tankwagon prices, practically advanced the price one-half cent to many of its customers proved unfounded. The scale continues to be 10 cents for lots of less than 100 gallons at one delivery; 9½ cents for 100 to 399 gallons, and 9 cents for over 400 gallons. The report was that the first two deliveries had been combined at the 10-cent price which would make the cost of the deliveries ranging from 1 to 399 gallons 10 cents. According to estimates there are in the Chicago district 30,000 domestic oil burners. The Standard Oil Co. expert estimates the average consumption at 1,500 gallons per burner. Several local distributors estimate the average consumption at 2,500 gallons. Several users have given statements of the actual quantity burned as commonly close to 2,500 gallons.

### Gas Oil Active

Gas oil has been in fairly active demand but usually the orders are for limited quantities. Several gas companies have bought for short periods as they claim the product is bound to decline. There is some demand from jobbers for furnace use and some jobbers are blending gas oil and distillates to reduce the average cost of their furnace oil. A number of distributors have discontinued the sale of any lighter product than gas oil for this season. Gas oil has maintained its price during the past two weeks much better than fuel oil owing to the various demands for different purposes. The industrial demand is of the hand-to-mouth order.

### Fuel Oil Less

Fuel oil is being quoted at an average of 5 cents a barrel less than the peak of two weeks ago. The business is very largely made up of from one to five orders. There are some who filled their tanks like the Bettendorf Axle Co., who took in trainloads of 20-23 fuel oil at a price stated to be $1.20 and this same oil has been sold by the refinery at $1.40. The buyer may feel pleased, but there are many who believe the price will be lower later. Buyers ordering minimum requirements make the market seem dull, especially as others are out of the market owing to placing orders in advance. The change in prices rules through the list. Some sellers believe there will be more buyers next month as some customers will be running out of oil and the demand for purely heating purposes will be larger. Distributors have had difficulty in placing contracts and the higher prices have made the quantity under contract much less than a year ago. The Smackover product is very firmly held with the well-treated oil held at $1.30 at the field and the same price quite commonly quoted to consumers. The demand will show some increase with colder weather as Smackover is largely used by tank truck distributors both as a fuel oil and for blending.

Lubricating oils have been practically unchanged. A report stated Mid-Continent Petroleum Corp. had accepted an order for 110 cars of 250, placed by an eastern refining organization but at the office of the Cosden Sales Corp., the report was denied, although it was stated they had sold 30 cars. The spot business is light and shows no change.

No general change has been made by the Standard Oil Co., in its tankwagon scale over the territory and the report is that there is no immediate prospect of any change.

# CALIFORNIA AGAIN DOMINANT FACTOR IN EASTERN REFINED MARKETS

By N. O. Fanning

*New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City*

NEW YORK, Sept. 27.—California has again become a dominant factor in the Atlantic Coast refined oil markets. Standard of New Jersey, Standard of New York, Pan American Petroleum and Atlantic Refining, all big marketers here, have recently made extensive contracts to buy California oils to be sold in this territory. The prices are believed to have been in line with quotations already existing on the Atlantic, allowing for freight, and so on; so it is doubtful whether the California competition will result directly in price reductions.

The main factor which will determine prices, it is believed, is the course of developments in the Mid-Continent. It is possible purchases made in California by eastern refiners will curtail business in the Southwestern states. If this happens, and production in the Mid-Continent keeps on increasing, price cuts there are inevitable, followed by lower quotations all over the country. That is the situation as summed up by a prominent marketer here.

Meanwhile, the eastern gasoline markets have apparently held up so far under California competition. (Incidentally, this competition relates chiefly to crude oil, fuel oil and gasoline). The Standard Oil Co. of New York did reduce the tankwagon price of gasoline in Rochester 1 cent, to 20 cents. But the manner in which Up-State New York prices have held up this year is an indication of the generally strong situation existing, compared with previous years at this season.

### Grades and Prices

Most students of the gasoline situation, however, are apt not to take into consideration that a cut in prices does not always represent a reduction in the price of a given grade, but rather the substitution of a lower grade for that previously sold. The motorist in the eastern trade is now growing accustomed to choosing between the three general grades of gasoline sold. Many are leaning toward the "high test" product, which often has a foreign substance in it to give it additional "kick."

The Standard of New Jersey reduced export gasoline in cases a half cent to 28.40.

### Kerosene Unchanged

The eastern kerosene market is firm, but less active. A slight shading in prices is reported in some sections. The tankwagon market has not yielded, but tank car quotations are less firm. Water white is 10¾-11 cents, while prime white is reported in tank cars at 10¼ to 10½ cents. This represents a shading of about one-fourth cent.

The explanation of the kerosene situation is that refiners are not producing so much gasoline, and this leaves a larger percentage of the lower fractions available. Furnace oil and kerosene both come under the latter category. Furnace oil is still held at 11½ to 12 cents, depending on the quantity bought.

### Gas and Fuel Oil

It looks now as if gas oil would not get above 6¾ cents, despite expectations that it would go to 7 cents. It seems to be more plentiful, and new contracts with artificial gas manufacturers were understood to be below 6¾ cents. These contracts have been closed, and new business is limited. The big contracts usually call for 100,000,000 gallons or more, and these really make the market.

Diesel oil is firm at $2.50 a barrel. Demand continues good. Bunker fuel oil is unchanged, but in better demand.

### Lubricating Oils

The market for lubricating oil is firm. Demand for spindle oils continues to improve. Cylinder oils are in better demand. Red and pale paraffins are sluggish. Automobile oils are also rather dull.

### Paraffin Wax

The wax market is slowly improving as to consumption, but prices have not hardened. An improved export demand is having a beneficial effect on the domestic situation, as it is taking in some of the slack.

### Petrolatum

The petrolatum market is fairly active, with prices largely unchanged. Dark green is in fair demand at 2 cents a pound, an advance of one-eighth cent over the price at which the bulk of the business has moved recently.

### Export Market

South America and Australia are the principal buyers of oil here at present. Brazil and Argentina are apparently stocking up for their summer trade, their summer being our winter. Australia continues to take large quantities of asphalt, wax, gasoline and kerosene.

Total exports of cased kerosene reported during the week ended September 22, amounted to 3,222,050 gallons.

Paraffin wax exports were a feature, amounting to 4,669,285 pounds. Of this total, 2,570,260 pounds were refined, and 2,099,025 pounds crude. The crude wax went largely to England.

Petroleum asphalt exports amounted to 4,580,425 pounds.

The following table shows principal exports of petroleum and petroleum products from New York reported during the last three weeks (figures in gallons unless otherwise noted):

| | Week Ended | | |
|---|---|---|---|
| Gasoline: | Sept. 22 | Sept. 15 | Sept.8 |
| Bulk | 837,662 | ..... | 2,095,463 |
| Barrels | 118,950 | 201,700 | 135,500 |
| Cases | 1,676,560 | 1,509,090 | 787,500 |
| Kerosene: | | | |
| Bulk | 1,073,393 | 234,809 | 1,626,108 |
| Cases | 3,222,050 | 1,747,240 | 913,660 |
| Fuel oil: | | | |
| Bulk | ..... | ..... | 250,865 |
| Lubricating oil: | | | |
| Bulk | 896,495 | 1,456,592 | 886,413 |
| Barrels | 1,770,600 | 730,250 | 1,043,050 |
| Cases | 332,640 | 116,280 | 229,150 |
| Lubricating grease: | | | |
| Barrels (lbs.) | 1,229,400 | 444,125 | 625,500 |
| Paraffin wax: | | | |
| Bags (lbs.) | 2,570,260 | 496,100 | 222,200 |
| Barrels (lbs.) | 2,099,025 | 311,600 | ..... |
| Petroleum asphalt: | | | |
| Bulk | ..... | 119,342 | ..... |
| Barrels (lbs.) | 4,580,425 | 1,304,825 | 972,925 |
| Petroleum coke: | | | |
| Bags (lbs.) | ..... | ..... | 1,100,000 |

The foregoing figures include shipments of 500 bbls., 1,000 cases, or over.

Of the 3,289,000 bbls. of crude and refined oil estimated to have arrived at Atlantic Coast ports during the week ended September 22, 871,000 bbls. were imported and 801,000 bbls. came from the Pacific Coast, leaving the contribution of Gulf Coast ports at 1,617,000 bbls., or less than the other two sources combined.

Receipts from California continued at a high rate, the total of 801,000 bbls. constituting a daily average of 114,000 bbls, against a daily average of 96,000 bbls. the preceding week. 124,000 bbls. two weeks previously, and an average for August of only 61,000 bbls. a day.

Imports for the week ended September 22 were largely from South America, the daily average from that source being 76,000 bbls., while Mexico contributed a daily average of only 48,000 bbls.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

| Source— | Sept. 22 | Sept. 15 | Sept. 8 |
|---|---|---|---|
| Gulf Coast | 231,000 | 319,000 | 374,000 |
| Pacific Coast | 114,000 | 96,000 | 124,000 |
| Mexico | 48,000 | 41,000 | 67,000 |
| South America | 76,000 | 10,000 | 94,000 |
| Total | 469,000 | 466,000 | 659,000 |

**Daily Averages by Months**

| | Gulf | Pacific | Mexico | So.Am. | Total |
|---|---|---|---|---|---|
| 1926: | | | | | |
| Aug. | 320,000 | 61,000 | 71,000 | 46,000 | 498,000 |
| July | 360,000 | 66,000 | 115,000 | 36,000 | 577,000 |
| June | 396,000 | 104,000 | 117,000 | 18,000 | 635,000 |
| May | 318,000 | 66,000 | 114,000 | 25,000 | 523,000 |
| April | 326,000 | 92,000 | 126,000 | 20,000 | 564,000 |
| March | 317,000 | 97,000 | 152,000 | 26,000 | 592,000 |
| Feb. | 332,000 | 73,000 | 104,000 | 18,000 | 527,000 |
| Jan. | 279,000 | 59,000 | 65,000 | 31,000 | 434,000 |
| 1925: | | | | | |
| Dec. | 298,000 | 56,000 | 90,000 | 13,000 | 457,000 |
| Nov. | 259,000 | 36,000 | 80,000 | 12,000 | 387,000 |
| Oct. | 249,000 | 36,000 | 80,000 | 22,000 | 387,000 |
| Sept. | 306,000 | 66,000 | 66,000 | 10,000 | 448,000 |

The foregoing estimates are based on the carrying capacity of incoming oil-laden tankers.

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# Bright Stocks From Oklahoma Crude

## Okmulgee Refinery Now Manufacturing Quality Products From Select Crude With Contact Filtering and Centrifuge Process

By C. O. Willson

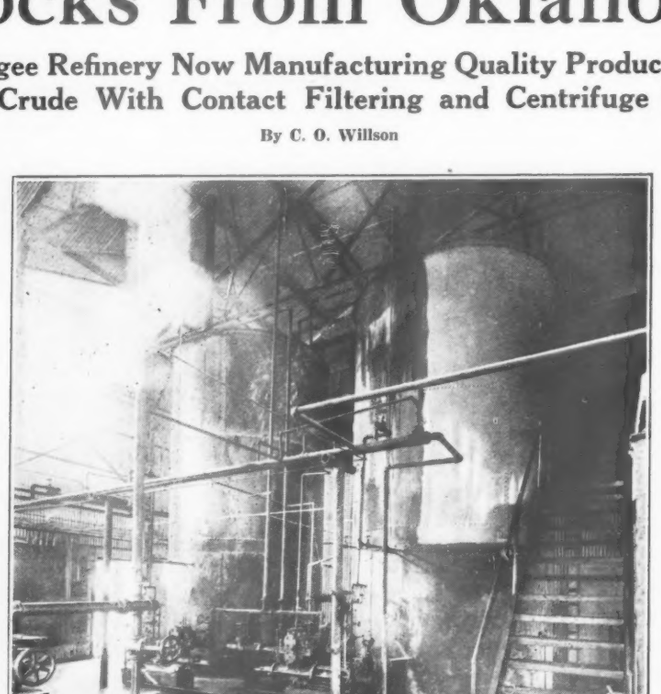
The Independent Oil & Gas Co. has had in operation for several weeks at its Okmulgee, Okla., refinery, a lubricating oil plant which incorporates many of the latest developments in the manufacture of bright stocks from steam refined stock or long residuum secured from a special grade of Oklahoma crude. The plant as a unit is about as different from the old cold settling and percolating filter type of installation as the latest pipe still and modern fractionating equipment plus cracking facilities, differs from shell still distillation in the refining of light oils.

The installation has several features which are not duplicated at any other refinery in Oklahoma with only one other similar type plant in the Mid-Continent Field. It is producing a bright stock meeting the usual requirements as to flash, fire and viscosity with excellent color and an unusually low pour point.

Before passing to a description of the plant, a word is necessary regarding the several changes which have been made at the refinery during the past six months. The refinery, as it is now operated, is a combination of what was formerly two plants owned by the Allied Refining Co. and the Indiahoma Refining Co. Both plants were purchased during the past year by the Independent and it has been the job of the refinery department which is headed by R. M. Riggins, secretary and treasurer of the company, to combine the two with the addition of a cracking unit and a lub plant. The cracking unit which is the Jenkins type was described in the June 24 issue of The Oil and Gas Journal. As now operated the old Indiahoma plant which had been shut down for several years handles the light oil output of the refinery and the Allied stills are a part of the new lub plant.

The Allied plant for several years in addition to refining gasoline, kerosene and other light end products manufactured a steam refined cylinder stock for which top prices were received due to the quality of the product. It was due to the excellent results received with the steam refined stock that the present owners decided to add the additional equipment necessary to manufacture bright stocks.

Although the refining industry is now obtaining lubricants from crudes which were formerly rejected for that purpose, the characteristics of the raw material are still the most important factor in determining the quality of the finished lubricants. The Independent company is particularly well situated in this regard. All its crude supply is brought to the refinery in its own lines from fields in the Okmulgee area. The crude for the manufacture of lubricants which has a good green color with practically no sulphur or asphalt is kept separate. The gravity averages about 39 degrees.



Interior view showing two tanks for mixing clay and oil. Tanks were being painted at time picture was taken. Stairs lead to Sweetland filters for removing clay.

### Use Steam Refined Stock

The bright stock plant was designed to operate either with steam refined stock or what is generally termed a long residuum stock. The company will continue to manufacture and sell a steam refined stock and it will also generally be used for the manufacture of bright stocks. During the few weeks that the plant has been in operation, however, the long residuum has been used with satisfactory results.

The steam-refined stock for the bright stock plant is prepared in the usual manner. The gasoline, kerosene, gas oil and wax distillate cuts are taken overhead at the light oil plant. The steam-refined bottoms constitute about 19 per cent of the original crude charge.

### Acid Treatment

Two light oil agitators at the old Indiahoma plant have been rebuilt so as to furnish facilities for giving the stock, its acid treatment. The agitators were lead lined and are now heavily insulated with provision made to draw off the acid sludge at the bottom.

It is customary to charge 600 bbls. of the refined steam stock to one of the agitators. It is then given an acid treatment of 35 pounds per barrel of charging stock. In this connection it should be pointed out that along with the operation of the plant a complete laboratory check is kept of all phases of the operation. In other words, the exact method of operation is determined by laboratory control.

For that reason the amount of chemical used in various phases of processing, the time required and other features of operation will vary somewhat from day to day. The data given in this article are representative of present operations but should not be interpreted as an arbitrary procedure from which there is no deviation. It is also true that certain phases of the operation are more or less experimental and later developments may bring some changes in operating procedure.

The oil after the acid treatment is agitated for about 40 minutes and then allowed to settle from 4 to 12 hours while the acid sludge is being drawn off. The acid sludge at the present time is being drawn off to earthen storage. The company expects to install equipment to recover the acid from the sludge or provide means for burning it as fuel. This sludge averages from 14 to 16 per cent of the charge.

Before being charged to the agitator the oil is brought to a temperature of 120 to 135 degrees Fahrenheit by means of a preheater. This is the temperature found to give the best results with the acid treatment.

### Filter Plant

The treated oil is then pumped through an insulated line to the filter house. This building contains the equipment necessary to prepare the clay, the mixing of the clay and oil for contact filtering and the presses to remove the clay so that the oil is ready for the centrifuge house.

Since it is a rather complicated operation in itself, it will probably be best to first describe how the clay is made ready for use. For treating at the Independent plant, a treated Montmorillonite or Bentonite is used as the decolorizing medium. The raw clay is shipped to the refinery from California. When the clay is received at the refinery it is one fourth inch material. It is pulverized with Raymond Impact Pulverizer No. 9 so that 85 per cent of the clay is 200-mesh, 11 to 12 per cent, 100-mesh and 4 per cent, 80-mesh.

### Treating Clay

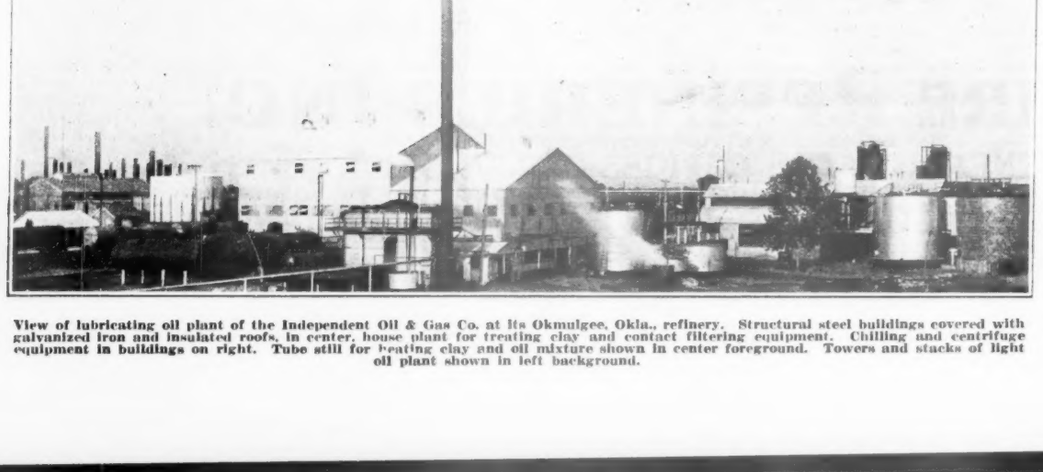
About 28,000 pounds of this 200-mesh clay is then mixed with a 20 per cent solution of sulphuric acid and water which had previously been brought to a temperature of 160 degree Fahrenheit. The acid solution constitutes about half of the total charge. Due to the chemical action the temperature of the charge increased about 10 degrees Fahrenheit when the two are mixed. By use of steam, the mixture is brought to 210 degrees Fahrenheit and then cooked for 12 hours. The clay is agitated with air during this process. A lead-lined steel tank is used for this cooking process.

After this treatment with the acid, the acid clay is pumped to another tank for washing. Tanks made of California fir are used for this operation. The clay is given from three to five washings each lasting five hours. The clay is allowed to settle after each washing. This washing removes the acid so that less than 1 per cent remains. Certain mineral compounds are removed by the acid treatment.

The clay or pulp as it is now called then goes to a storage tank where it is allowed to settle for 12 hours. Tests are made to find out the amount of net dry clay in the pulp. This is determined by obtaining the percentage of solids in the pulp. The next dry clay averages about 2.25 pounds per gallon of pulp.

### Mixing Operation

In using this pulp as a filtering me-



View of lubricating oil plant of the Independent Oil & Gas Co. at its Okmulgee, Okla., refinery. Structural steel buildings covered with galvanized iron and insulated roofs, in center, house plant for treating clay and contact filtering equipment. Chilling and centrifuge equipment in buildings on right. Tube still for heating clay and oil mixture shown in center foreground. Towers and stacks of light oil plant shown in left background.

dium the acid oil from the agitators and the pulp are both charged to a mixing tank. The proportion is about .6 of a pound of net dry clay per gallon of acid oil. The exact mixture is dependent on the characterics of the acid oil and the color desired in the finished product.

Two hundred barrels are charged at one time. This mixture is agitated in the tank through use of a centrifugal pump which takes suction at the bottom and discharges at the side of the tank. This is a heavy mixture and requires a Worthington pump especially designed for that purpose. Eight hours are required to mix and empty a charge. Two tanks are provided so that one can be used in mixing the pulp and oil while the other is being emptied.

The next phase of the operation is of special interest. The oil and clay from the mixing tank is charged to a tank which might be called either a separator of vaporizer It is picked up at the bottom of the separator and circulated through a Foster tube still especially designed for the Independent plant. In this tube still it is brought to a temperature of from 425 to 450 degrees Fahrenheit. The heated oil and clay mixture is discharged into the top of the separator where it comes in contact with the incoming charge from the mixing tank. The latter enters the separator in the form of a spray.

This contact with the hot oil serves to vaporize all the moisture in the clay and oil mixture. The steam passes out the top of the separator. This action serves the double purpose of removing the moisture before the mixture is heated to the high temperature and at the same time is responsible for the turbulence in the body of the heavy oils which assures the most intimate contact between the clay and oil.

About 65 per cent of the hot oil is constantly being taken from the system just before it enters the separator. It passes through a cooling box and reduced to a temperature of from 160 degrees to 170 degrees Fahrenheit before it is discharged into a blending tank. In the latter tank, the oil and clay mixture is blended with a naphtha having a 200 initial and 400 endpoint. This is a 50-50 blend. The blending process is continuous.

**Blending Naphtha**

A tug boat propellor type of agitator connected to an electric motor is used in blending the naphtha and mixture. All pumps in the entire lub plant are motor driven with the exception of the pumps used in charging and pumping out the mixing tanks.

The blend is then charged to one of two Sweetland No. 10 filters where the clay is removed. Most of the trade is familiar with the operation of these filters. The operating principle is practically the same as that of the wax press which has been a part of the industry ever since lub oils were manufactured from petroleum. The blend is charged to the filter at a pressure of 35 pounds. The clay collects on the steel plates. At the Independent plant the blend is charged to the filters at the rate of 40 bbbls. an hour. The rated capacity of the units is approximately twice that amount.

Each filter is on the line about 45 minutes. It is blown with air for 10 or 15 minutes so that the clay dries on the plates. It is then dumped in the usual manner. One unit can be dumped and made ready to operate while the other unit is in use. The clay taken from the filters has no commercial value.

With the clay removed the oil and naphtha blend now passes to another blending tank which is a part of the centrifuge plant. Here 15 per cent more naphtha is added so that now the ratio is 65 per cent naphtha to 35 per cent oil.

Before the 15 per cent is added, the blend is brought to a temperature of 100 degrees to 105 degrees Fahrenheit. It has been found that the best blending results are obtained at that temperature and also assures a much better separation in the centrifuge operation.

**Chilling Tanks**

The blend is then pumped to one of the chilling tanks. These tanks are insulated with five inches of hair felt and four-inch tile. These tanks have mechanically-driven paddles for agitation. A 125-ton Carbondale machine of conventional design is used in the refrigerating system.

The brine from the refrigerating system is circulated through coils in the chilling tanks so that the oil is cooled at an average of 3 degrees per hour. The blend is agitated about five minutes of each hour to keep the wax from settling in the tank.

After the blend has been reduced to a temperature of 15 degrees below zero it is pumped from the chilling tank to what is termed a supply tank. This is a 40-bbl. tank insulated with five inches of hair felt, metal lath and asbestos and then covered with canvas and painted.

**Centrifuge Machines**

Fifteen Sharples centrifuge machines are fed from this one supply tank. The blend leaves the tank in two feed lines connecting to a header which in turn connects to each of the machines. There is a strainer in each of the two feed lines to catch ice or any other solid particles coming from the supply tank. When one strainer becomes clogged, the stream automatically shifts to the other line while the operator cleans the first strainer.

As in the case of the Sweetland filters the trade is generally familiar with the operation of the Sharples machines and the principle on which they operate. The force generated by the revolving cones is said to be 13,000 times as great as the force of gravity with which the old cold settling method depends for its separation of the wax and oils. Each of the machines are driven by a separate motor. The 15 units at the Independent plant have a capacity of 1,500 bbls. of solution daily.

Two streams leave each unit, one being the amorphous wax and the other oil and naphtha. The amorphous wax constitutes about 16 per cent of the oil before it was blended with naphtha. This wax, known commercially as petrolatum, can be sold as such. It is also excellent charging stock for cracking units.

The wax free oil and naphtha is now ready for the stills where the latter is removed by distillation This is done with two 500-bbl. shell stills which are operated semicontinuously. These stills are direct fired with a large amount of steam being introduced into the still.

From the still the oil is pumped to the receiving house which is a brick building with an asbestos roof. The receiving house contains six tanks of 500 bbls. capacity. The oil is allowed to cool in the receiving house to a temperature of 200 degrees Fahrenheit and is then blown bright with air. The air is preheated to a temperature of 150 degrees Fahrenheit by steam coils in the air chamber. Only 20 minutes is required for this operation.

In making bright stock from the steam refined stock the flash of the finished product is from 525 degrees to 530 degrees Fahrenheit with a fire of 600 degrees to 605 degrees Fahrenheit. The viscosity is 155 degrees to 160 degrees with color D-18 in solution. At the present time only bright stock is being made at the Independent plant, although the management contemplates making a full line of neutral oils and compounding a full line of motor and industrial oils. The management later expects to manufacture neutrals and compound a full line of motor and industrial oils.

## IMPORTANT NEW AREA IN TEXAS PANHANDLE

(Continued from Page 25)

The Empire Gas & Fuel Co.'s No. 1 Heithholt, in Section 152, logged the top of the lime at 849 feet above sea level, or nearly 100 feet above the lime in The Texas Company's No. 1 Brown, but the interval between the lime and the pay in the former well was greater and the producing zone was actually found lower structurally in the Heithholt than in the Brown well. The Texas Company's No. 1 Brown reached the oil pay at plus 142 feet while the Heithholt had it at plus 129 feet. The interval in The Texas Company's producer was only 608 feet and in the Empire's well only 720 feet. Young & Patrick's No. 1 Byrum, in Section 188, also had a short interval between the top of the lime and the producing zone, amounting to only 624 feet. It made about 10,000,000 feet of gas and was said to have had about a 10-bbl. showing of oil. The Texas Company's No. 1 E. Cooper in Section 6, Block 9, I. & G. N. Survey, Hutchinson County, had an interval of 744 feet but found the oil zone 123 feet below sea level and picked up a hole full of water at minus 168 feet.

The interval in each of the above wells referred to is that between the top of the lime and the top of the oil-bearing zone. In the Roxana Petroleum Corp.'s No. 1 Bryan, this interval is 723 feet, while the interval between the top of the Big lime and the rich pay streak is 815 feet.

The Roxana-Bryan producer is apparently situated on an unbroken monoclinal plane, so far as the present points of control indicate. Between the White Deer Oil Co.'s drilling well 3 miles northwest of it and the Young & Patrick's No. 1 McConnell, a dry hole 4 miles southeast of it, however, there is plenty of room for a re-entrant similar to that in the Wilcox-Pampa Pool, and it is probable that future drilling will disclose a similar condition.

The differences in interval in the various wells mentioned above has led to considerable speculation as to what future drilling will develop in this region. It is apparent that something unusual has occurred to cause such variations between the top of the Big lime and the reservoir beds of the oil, but just what these unusual circumstances may have been cannot be determined from the meager data now available.

The accompanying map is published through the courtesy of Carl C. Adams, consulting geologist, with offices at 516 First National Bank Bldg., Fort Worth.

## ROCKY MOUNTAIN AREA

(Continued from Page 45)

| | |
|---|---|
| Salt Creek | 44,530 |
| Greybull | 20 |
| Rock River | 2,010 |
| Notches | 250 |
| Rex Lake | 200 |
| Lance Creek | 1,210 |
| LaBarge | 220 |
| Poison Spider | 720 |
| Osage | 340 |
| Hamilton Dome | 1,150 |
| Lander | 390 |
| Byron | 40 |
| Pilot Butte | 40 |
| Lost Soldier | 5,460 |
| Ferris | 80 |
| Simpson Ridge | 130 |
| Total | 65,240 |
| **Montana** | |
| Cat Creek | 2,720 |
| Lake Basin | 200 |
| Sunburst | 23,000 |
| Total | 25,920 |
| **Colorado** | |
| Florence | 500 |
| Moffat | 3,240 |
| Tow Creek | 790 |
| Fort Collins | 3,585 |
| Boulder | 25 |
| Rangeley | 100 |
| Total | 8,240 |
| **New Mexico** | |
| Hogback | 690 |
| Rattlesnake | 1,060 |
| Artesia | 3,000 |
| Total | 4,750 |
| Grand total | 104,150 |

## SHREVEPORT MARKET WEAKER EXCEPT NAVY

SHREVEPORT, La., Sept. 25.—Navy gasoline was the only product in the Shreveport refined market moving fairly steadily at the end of the week. Also her products were weaker. Gasoline had a fair demand throughout the week, although a little was reported to be going into storage. Practically all of the motor fuel went into the trade territory.

Natural gasolines eased off as demand for that product slackened. However, at the end of the week that product was moving fairly steady at its new price level. Kerosene went down when it went through another week of inactivity.

Gas oils were slow and hard to dispose of. For several weeks refiners did not have to go after business for that product, but during the past week they were hunting a gas oil market. Distillate also was weaker. Fuel oil inquiries were slow and that product went off fractionally in price. Considerable fuel oil is going into stock.

In Arkansas the Navy gasoline market was slow, with all other products save fuel oil weaker. Fuel oil and Smackover remained firm in price and movements were fair.

## INDUSTRIAL RELATIONS MEETING AT CHICAGO

**By J. B. Waldo**

CHICAGO, Sept. 27.—The eighth annual meeting of the representatives of the Industrial Relations Plan of the Standard Oil Co. of Indiana was held at the Congress Hotel today, with 150 delegates representing the general office at Chicago and the refineries at Whiting, Wood River, Sugar Creek, Casper, Laramie and Greybull. Col. R. W. Stewart, chairman of the board, and Dr. William H. Burton, president, attended.

The following subjects were covered in the annual reports of various committees: Wages and hours; working conditions and safety; conciliation, athletics and recreation; rules and procedure. The spokesmen were: General office, Miss Lulu Vollriede; Casper, W. H. Howland, clerk; Greybull, D. E. Starks, stillman; Laramie, Roy T. Stewart, machine shop foreman; Sugar Creek, F. G. Lee, foreman carpenter; Whiting, Edward Silvers, carpenter, and Wood River, J. B. Lamm, office clerk.

The afternoon session was devoted to papers on selected topics presented by delegates:

"Vacations with pay for hourly paid men," by Clifford A. Miller, pumper, Casper.

"Every employe a booster and a salesman," by Michale J. Thoms, clerk and stenographer, Chicago office.

"Morale building vs. morale destroying organization," by Leo McDonald, foreman, Greybull.

"Political agitations against Standard Oil Co. of Indiana," by George Ovens, pressure stillman, Laramie.

"Employes' stock ownership," A. O. Hodges, assistant engineer, Sugar Creek.

"Standard Oil services to the public," by James H. Judson, shift foreman, filtering oils department, Whiting.

"The influence on plant morale of our present method of making promotions," by W. I. Jolly, superintendent construction, Wood River.

At the annual dinner Joseph E. Morgan, assistant in inspection department, Casper, was toastmaster. The speakers included Charles L. Ross, electrician, Casper; George A. French, clerk, railroad sales department, general office; Ed L. Wood, car loader, Laramie; Albert P. Duff, helper, Sugar Creek; James A. Malo, locomotive engineer, Whiting; William E. Kelley, motorman in bricklaying department, Wood River; Col. R. W. Stewart, chairman of the board, and Dr. William H. Burton, president. There were about 175 present.

### ALEX HILLSTROM DEAD

SHREVEPORT, La., Sept. 25.—Alex. Hillstrom, aged 63, who died at his home here, was, at the time of his death a geological scout and land buyer for the Standard Oil Co. of Louisiana. He was the discoverer of the Hillstrom anticline in Utah which was named after him in Government reports. He was a native of Sweden and came to America early in his youth. He seemed to have an uncanny penchant for selecting wildcat acreage that proved productive, old-timers here point out. He boosted such territory as what is now the El Dorado Field, Bull Bayou district and Sarepta.

# REFINING AND MARKETING

## CHANGES IN INDIANA MARKETING DIVISION

In connection with the retirement of T. J. Thompson as general manager of sales for the Standard Oil Co. of Indiana after 43 years continuous service with the company, the board of directors of the company has announced several changes and transfers in the marketing department of the company.

As announced in last week's issue of The Oil and Gas Journal, Mr. Thompson will be succeeded by Amos Ball, who has been assistant general manager of sales. A picture and sketch of Mr. Ball appears on page 62 of this issue.

Following are the changes which will become effective October 1:

N. R. Grimshaw is transferred from the assistant general manager of the Western Division to that of assistant general manager at large with the authority of assistant general manager of all divisions.

H. R. Cochran is transferred from assistant general manager of the Northern Division to assistant general manager of the Western Division.

C. F. Hatmaker, Chicago manager of sales is appointed assistant general manager of the Northern Division.

E. P. Galbreath, manager at Detroit is appointed assistant general manager of the Eastern Division.

The following additional changes and transfers will become effective November 1, 1926:

T. B. Clifford, manager at St. Louis, is appointed manager at Chicago.

R. F. McConnell, manager at South Bend, Ind., is appointed manager at Detroit.

J. W. Wilson, assistant manager at Chicago, is appointed manager at Kansas City.

H. C. Griffin, manager at Kansas City, is appointed manager at Peoria, Ill.

H. J. Bemis, manager at Sioux City, is appointed manager at St. Joseph, Mo.

George W. Coldsnow, manager at Peoria, Ill., becomes manager at St. Louis.

W. C. Van Horne, assistant manager at Milwaukee, is appointed manager at Sioux City.

C. H. Wagner, manager at St. Joseph, is appointed manager at South Bend, Ind.

Ross C. Smith, superintendent of service stations at Chicago, is appointed assistant manager at Chicago.

Clay Lee, assistant manager at Mankato, Minn., is appointed assistant manager at Duluth.

Carl Monson, assistant manager at Joliet, is appointed assistant manager at Grand Rapids.

F. H. Fillinghan, assistant manager at Grand Rapids, is appointed assistant manager at Indianapolis.

P. A. Serrin, assistant manager at Indianapolis, is appointed assistant manager at Joliet.

W. T. Bannister, assistant manager at South Bend, is appointed assistant manager at Kansas City.

W. J. Duncan, sales promotion at South Bend, is appointed assistant manager at LaCrosse, Wis.

M. W. Dock, special salesman at Duluth, made assistant manager at Mankato.

E. N. Schallenberger, assistant manager at Minneapolis, is appointed assistant manager at Milwaukee.

J. M. Cook, Polarine sales department, Chicago, appointed assistant manager at Minneapolis.

Gordon C. Smith, special salesman at Detroit, is appointed assistant manager at Saginaw, Mich.

E. R. Soop, assistant manager at Saginaw, made assistant manager at Sioux City.

K. T. Wenger, assistant manager at Kansas City, made assistant manager at South Bend.

J. E. Monegan, assistant manager at LaCrosse, transferred to other duties.

J. N. Elkhert, assistant manager at Sioux City, transferred to other duties.

The following appointments will become effective January 1, 1927:

G. E. Webb, assistant manager at Duluth, appointed manager at Green Bay, Wis.

G. T. Daugherty, special salesman at Milwaukee, appointed assistant manager at Green Bay.

## UTILIZATION OF RESIDUE GAS AS REFINERY FUEL INCREASING

Only 324,000 tons of coal of a total of 6,153,000 tons consumed in the United States was burned at refineries west of the Mississippi River, according to a report by the Bureau of the Census, covering 1925 operations. The report shows that the bulk of the coal was consumed at refineries located along the East Coast, the Appalachian area, Indiana and Illinois.

In Oklahoma only 1,000 tons of coal were burned, Kansas 229,000 tons and the Rocky Mountains 94,000 tons. No coal was consumed by California refineries. In relation to other fuels, the Appalachian area was the greatest consumer of coal.

Probably the chief development reflected in the Government report was the increase in the utilization of refinery gas. More and more refiners are installing equipment to recover the gasoline from refinery gases utilizing the residue gas as refinery fuel.

Figures compiled by the Bureau of the Census show that the refineries consumed for fuel in 1919, 23,649,000 bbls. of fuel oil, 4,725,000 tons of coal, and nearly 27,000,000,000 feet of gas; and, in 1923, 4,902,000 tons of coal, figures for oil and gas used not being available for that year. Since runs to stills in 1919 were a little less than half what they were in 1925, it follows that the consumption of oil for fuel per barrel refined was relatively the same last year as it was six years before. Increased use of the cracking process in recent years has tended toward greater fuel consumption. This has been compensated, however, by the use of a more efficient fuel (gas for coal) and by increased efficiency in operation.

Although the consumption of coal has increased, the proportion to the total amount of fuel used has decreased. The consumption of coke at refineries in 1919 and 1925 was 320,000 and 314,000 tons respectively. This decrease is surprising in view of greatly increased production causing additions to stock.

Increased use of gas for fuel has compensated the deficit due to coal. The consumption of gas per barrel of oil refined has doubled in the last six years. Accessibility rather than price governs the use of natural gas at refineries and, where possible, the refineries have supplied themselves with gas by means of pipelines to adjacent fields. There has probably been an increase during recent years in the amount of refinery or "incondensable" gas used for fuel. This has been made possible by improvements in refinery practice which now conserves large quantities of gas formerly lost in the air. Such gas saved serves a dual purpose, for it is usually treated in gasoline extraction plants, after which the residue gas is burned as fuel.

Besides the fuel oil which it burns under stills, the petroleum industry uses great quantities of oil, often in the crude state, for field operations, such as drilling and pumping wells, and operating pipelines. Although the final figures for 1925 have not yet been prepared, it is probable that 6,000,000 bbls. of oil were consumed for field purposes during 1925, which amount includes 1,825,000 bbls. of crude petroleum consumed in the operation of pipelines east of California.

**Crude Petroleum Consumed at Pipeline Pumping Stations, 1925**
(Thousands of barrels)

| | |
|---|---|
| Appalachian | 6 |
| Indiana, Illinois, etc. | 64 |
| Oklahoma and Kansas | 622 |
| Texas | 761 |
| Louisiana and Arkansas | 325 |
| Rocky Mountain | 47 |
| Total east of California | 1,825 |

**FUEL CONSUMED BY REFINERIES, 1925**
(Units of thousands)

| | Oil (bbls.) | Coal (tons) | Gas—Natural (M cu. ft.) | Gas—Refinery (M cu. ft.) | Coke (tons) | Other |
|---|---|---|---|---|---|---|
| East Coast | 14,164 | 1,406 | .... | 6,863 | 104 | (1/) |
| Appalachian | 641 | 1,346 | 2,364 | 537 | 5 | (2/) |
| Ind., Ill., etc. | 2,927 | 3,077 | .... | 5,505 | 33 | (3/) |
| Oklahoma | 2,552 | 1 | 25,670 | 3,295 | .... | .... |
| Kansas | 3,021 | 229 | 5,955 | 3,175 | 6 | .... |
| Texas Inland | 2,277 | .... | 4,900 | 422 | 8 | .... |
| Texas Gulf Coast | 13,189 | .... | 12,956 | 7,354 | 79 | .... |
| Ark.-La. Inland | 15 | .... | 6,267 | 353 | .... | .... |
| La.-Gulf Coast | 4,920 | .... | .... | 2,518 | 59 | .... |
| Rocky Mountain | 1,761 | 94 | 19,007 | 3,448 | 20 | .... |
| *California | 4,918 | .... | 10,723 | 1,571 | .... | .... |
| Total | 50,455 | 6,153 | 87,842 | 85,041 | 314 | .... |

1/ 3,269 cords wood. 2/ 72,632 kilowatts. 3/ 183,660 kilowatts. *Compiled by J. W. Mashaw, Bureau of Mines, San Francisco, Calif.

## ARRESTED FOR USING UNTAXED GASOLINE

The right of motorists to buy gasoline in one state which does not have a gasoline tax for consumption in another state having a tax without paying the tax will be tested in the courts of Indiana. So far as known no similar case has ever been tried in the courts of any state.

Howard Vandermark, former commissioner of the Vincennes, Ind., board of public works, was arrested on a charge of violating the Indiana law which requires motorists to use gasoline on which a 3-cent tax has been paid.

It is alleged Vandermark violated the Indiana gasoline license law August 8, when he used in Indiana gasoline on which the license had not been paid. The gasoline is said to have been bought across the Wabash River in Lawrence County, Illinois.

Agents of the Indiana gasoline license department have been keeping watch lately on the autoists who have gone across the river to buy their gasoline and have demanded payment of the tax from many of them. They assert only three persons, among them Vandermark, refused to comply with their request for payment.

### TEXAS MAY INCREASE TAX

That the present state tax in Texas of 1 cent on gasoline will be advanced to 3 cents now appears certain. A special session of the legislature is now in session and the governor of the State has asked that the tax be increased to either 3 or 4 cents.

## Gasoline Price War In California Area Becomes More Acute

LOS ANGELES, Calif., Sept. 27.—The gasoline price war which has been waging in this city and section for several weeks has become more acute and threatens to spread to other parts of the state. If the price cutting campaign in which both small and large distributors are taking part continues to spread, it is feared it may result in lower crude prices later.

Distributors in this section which obtained their gasoline supply from the small refiners in the Los Angeles Basin often maintain prices under those of the Standard Oil Co. and other distributors. This competition about three weeks ago resulted in the Standard distributing through its tankwagon customers in the Los Angeles area a product known as "Flight Gasoline" selling at 17.5 cents, including a 2-cent tax. This price was 3 cents under the Red Crown gasoline, the principal domestic grade of the Standard and other distributors.

On September 20 as was explained in last week's issue of The Oil and Gas Journal, the Union Oil Co. reduced the price at its station to 17.5 cents, the same as the low-priced Standard grade. The Julian Petroleum Co., Gilmore Oil Co., Richfield Oil Co. and California Petroleum Corp. met the Union reduction the following day. The Shell company and the Pan American Petroleum Corp., two of the largest distributors, continued to sell at 20.5 cents, including the 2-cent tax.

This situation continued until September 24, when the Standard reduced Red Crown gasoline to 18.5 cents. At the same time it started the distribution of "Flight Gasoline" through its own stations at 17.5 cents. The Pan American and Shell then reduced their price to 17.5 cents thus meeting the Union price. On September 25 the Union reduced its service station price to 16.5 cents. Up to today no other company has met the latest Union reduction.

This price war has been confined to the Los Angeles area. However, the Richfield Oil Co. has announced a general reduction of 3 cents throughout California.

It is expected the next two or three days will determine whether other companies will be forced to meet this Richfield competition in other sections. If prices are reduced generally it is apparent the retail price is out of line with the present posted schedules on California crude. Some market observers fear the gasoline price wars, coupled with an assured increase in California crude production before the end of the year, will force low crude price schedules.

### CROWN CENTRAL'S NEW OFFICE

The Crown Central Petroleum Corp., with general offices in the Post Dispatch Building, Houston, Tex., refiners of zero pale and red filtered and unfiltered oils, has opened a branch sales office at 624 South Michigan Ave., Chicago, Rooms 1115 and 1116. Henry P. Bolt, who has been covering this territory for the company in the past, will have charge of the Chicago office.

### GASOLINE TAX $9.61

The 2 cents a gallon tax on gasoline drew an average of $9.61 from every motorist in the District of Columbia during the fiscal year ending June 30. The report showed that 48,540,044 gallons of gasoline were used, yielding a tax of $961,080.87. Compared with the preceding fiscal year the consumption increased 7,446,519 gallons.

# Condenser Boxes

# GRAVER

## Can build any size or type of Condenser Box

## You may require

**Graver Builds**

**Tanks**
- *Welded*
- *Riveted*
- **Gas Holders** (*Riveted, Inside & Outside Welded*)
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- *Tower Tanks*
- *Standpipes*
- *Any Size Tanks Erected Anywhere*

**Refinery Equipment**

**Jenkins Cracking Process**

**Stacks-Breechings**

**General Steel Plate Construction**

**Water Softeners**
- *Hot Process*
- *Cold Process*
- *Zeolite*
- *Household*

**Filters**—*Pressure*

**Purifying Systems** *for* **Swimming Pools**

GRAVER Corporation *Founded 1857*

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NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

# Brief Items for Plant Operators

## New Urbain Process Gives Satisfactory Results in Wyoming

CASPER, Wyo., Sept. 25.—The Urbain process for extracting gasoline from natural gas has proved successful in a four-months' test in the Salt Creek Field which has just been concluded. This test was made with an experimental plant handling about 1,000,000 feet daily and was placed in the Salt Creek Field by the Urbain Corp. to see what the new process would do under the exacting conditions of gas extraction at Salt Creek.

The Urbain process belongs to the so-called "charcoal" type of natural gasoline plant. It was perfected in foreign fields and is controlled by foreign capital. The carbon used is said to be of high activity and low retentivity and economical in operation. It is peculiarly adapted to gas of low gasoline content.

The Midwest Refining Co. has the largest compression plant n the world at Salt Creek. This plant is modern in every respect and the residual gas was considered to be as clean as can be had with the compressor type of plant. The compressor plant leaves less than a pint and a half recoverable gasoline in the residual gas that comes from the compressors.

The altitude of nearly a mile above sea level also brings a big problem to the plant manager who has operated in lower altitudes. The residual gas from the Salt Creek plant of the Midwest Refining Co. is sent to Casper where it is used as fuel and this requires that the residual gas be delivered from the compressors under pressure to send it through the pipelines to Casper, 40 miles away.

The Urbain plant made a test of the residual gases as these came from the compressors and was later tried on the straight casinghead gas direct from the wells. In both instances the new process cleaned the gas of all the gasoline it contained so that the loss in the residual gas from the Urbain process was a negligible factor. While the amount lost in the residual gas from the compressors was a small item in 1,000 feet of gas, when it is considered that the Midwest Refining Co. handles a daily quantity averaging 20,000,000 feet, the amount left in the residual gas from the compressors becomes a factor worthy of serious consideration.

The Urbain process is the discovery of Doctor Urbain, a French chemist. Assisted by his son, Dr. Remy Urbain, the process had been brought to a high point of efficiency in Europe where it is in use in the heavy oil fields in Poland and other countries and is also used in the clarifying of liquors.

The Urbain process was installed in the Salt Creek Field the past summer and later installations have been made in Oklahoma and at Amarillo, Tex. The installation at Salt Creek was expected to furnish better data on the operation of this new process in this country as the conditions at Salt Creek are such that if the plant was found suitable there, it would probably be found appliable in every other region.

While directing the new plant at Salt Creek, Dr. Remy Urbain was recently killed in an automobile accident at Casper.

## GASOLINE IS GAINING AS FUEL FOR TRACTOR

That there is a very decided trend toward the substitution of gasoline for kerosene or distillates as fuel for tractor is the statement of an article in a recent issue of Automotive Industries.

It is pointed out that the higher prices and declining production of kerosene is having a direct effect on the tractor industry in that there is an increasing use of tractors designed to operate on gasoline, kerosene or distillate in place of kerosene or distillates only. This is leading to considerable discussion as to the future advisability of discarding kerosene carburetors and induction systems and redesigning for use of gasoline only.

In the earlier days of the tractor industry, according to the article, equipping to operate on kerosene or distillate rather than on gasoline alone was logical in view of the favorable price of heavier fuel but in recent years there has been a swing to the use of gasoline burning tractors.

The article stated in part:

An additional condition which has a bearing on this problem is the fact that owing to the poor antiknock characteristics of kerosene a lower compression ratio is required to obtain satisfactory operation than is required for gasoline. While designed primarily for agricultural purposes, the tractor has found wide applications in industry. In rural sections, kerosene is probably the favored fuel and used to a greater extent than gasoline, but where the tractor is used for industrial purposes, it is safe to say that comparatively few are operated on kerosene owing to the greater convenience of the gasoline supply. The proportion of tractors designed to operate ordinarily on kerosene but which are actually operating on gasoline is probably large. This situation indicates a considerable fuel waste.

From the standpoint of mechanical design the changes required to operate on gasoline present slight difficulties. In view of the inherent unfavorable characteristics of kerosene as a fuel for the conventional type of engine, it seems likely that as a result of this and other factors which have been mentioned, the future will see a marked increase in the proportion of tractor models designed to operate solely on gasoline.

Before the advent of the automobile, kerosene was the mainstay of the oil refining industry, but with the rise of automotive transportation, the demand for gasoline soon exceeded that for kerosene and it has been rapidly relegated to a subordinate position. In 1900, the output of kerosene was approximately 55 per cent of the crude petroleum run to stills. In 1914, this proportion had dropped to 24 per cent and the ratio has continued to decrease until at the present time kerosene represents probably less than 8 per cent of refined petroleum products.

## NEW SKIMMING PLANT FOR SPOKANE, WASH.

Montana interests which control the Arro Oil & Refining Co. and Maple Leaf Refining Co., will build a small skimming plant at Spokane, Wash., according to an announcement by H. H. Schwartz, president of the two companies. The plant will operate on crude shipped by tank car from the Sunburst Field of Montana. The plant will have an initial capacity of 1,000 bbls. daily.

The Arro Oil & Refining Co. is operating a 2,500-bbl. refinery at West Lewistown, Mont. The Maple Leaf company operates a small plant in Canada across the line from the Sunburst Field.

## AMONG THE TECHNICAL MEN

E. L. Peffer, associate physicist, chief of the capacity and density section of the Division of Weights and Measures, Bureau of Standards, Washington, D. C., has been engaged for the past 12 years in scientific work.

E. L. Peffer

Mr. Peffer obtained his education at Dickinson College, Carlisle, Pa., the degree of B. S. having been conferred in 1911 and the degree of M. A. on completion of the required post graduate work.

In 1913, Mr. Peffer received an appointment on the scientific staff of the Bureau of Standards where he has since been employed. The nature of the work done by the section in which he entered as an assistant and since has become the chief, is that of testing and certifying of precision glass volumetric apparatus, hydrometers, state standards and other capacity measures.

In addition to the work mentioned above, Mr. Peffer has been engaged in research work on the density and thermal expansion of petroleum oils at various temperatures. As a result of the work, the Bureau of Standards Circular No. 154, National Standard Petroleum Oil Tables has been prepared from the data obtained by Mr. Peffer and from the work carried on under his direction. This circular contains expansion tables in degrees A. P. I., in specific gravity, volume change due to change in temperature and pounds per gallon tables. It has the approval of the American Petroleum Institute, the Bureau of Mines and the Bureau of Standards for use in the petroleum industry.

## CALORIMETER TESTS BY STANDARD'S BUREAU

Twelve years ago the Bureau of Standards published the results of an investigation of calorimeters for determining the heating value of gas. (Technologic Paper No. 36.) The investigation indicated that the water-flow type of instrument was suitable for the purpose, and instructions for operating such instruments were subsequently issued by the bureau. The water-flow calorimeter is now accepted as the standard instrument in the gas industry both for purposes of regulation and sale and for control of the manuafcturing process.

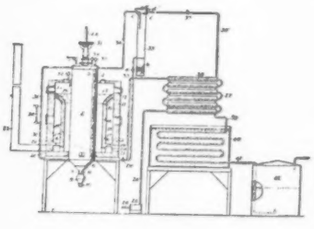
In many instances hourly tests of heating value are made. In such cases a recording calorimeter would obviously be useful, and many types of recorders have been proposed. Recently, when it was decided to undertake an investigation of recording calorimeters, which was to be limited to instruments which were actually in use to some extent, excluding those in the experimental or development stage, it appeared that under these conditions the test would include only one instrument. Although the situation was unique, it was decided to proceed with the test of the one instrument. The purpose of this announcement is to bring the situation to the attention of any who may be interested. Results will evidently not be available for some time, but as soon as they are announcement will be made through The Bureau of Standards bulletin.

### NEW REFINERY FOR MANITOBA

CHATHAM, Ont., Sept. 25.—Officers of the Oil Producers Corp. of Canada, and the Deloraine Oil Co. of Manitoba, are backing a project to build a refinery plant at Deloraine, Manitoba. W. Collins, president of the Deloraine Oil Co., has gone East to look over refinery equipment. The project is being largely financed by Deloraine business men, and it is planned to operate the plant on Montana crude. The Oil Producers Corp. is reported to be establishing a plant at Calgary, Alta., for the manufacture of automobile polish from crude oil, under a patent process controlled by the company.

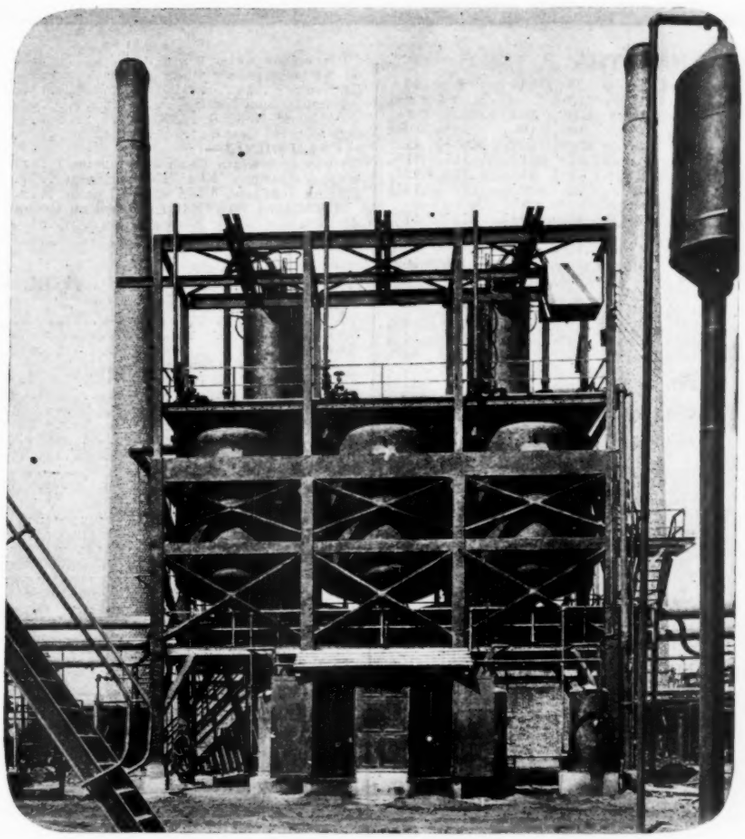
## Recent Patents

1,598,805. Apparatus for Cracking Oils. Loftus B. Cuddy, Bayhead, N. J. Filed November 10, 1919. Serial No. 336,788. 7 Claims. (Cl. 196—116.)



1. In an apparatus for cracking oils, a vertical still, a furnace partly enclosing the same and spaced therefrom, a baffle wall intermediate the furnace and still and forming a heating chamber surrounding the still between the wall and the furnace, and heating means for the furnace, said wall having a plurality of restricted openings forming the only means of communication between the furnace and the still for distributing the heat from said chamber to the still, substantially as described.

# Design—Equipment—Erection



*Gray Vapor Phase Treating Plant Constructed for Marland Refining Co., Ponca City, Okla.*

THE prompt and efficient manner in which the above construction was completed is evidenced by the neat and workmanlike appearance of the finished job.

Regardless of the magnitude, we are in position to execute work of this nature under a definite lump sum contract, covering every detail from preliminary design through to completion.

We solicit the opportunity of proving to you the savings in cost and time of completion which we can effect in a contract of this kind.

*Let us quote on your requirements*

Associates

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# REFINERY AND CRUDE PRICES

**Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields**

## GASOLINE AND NAPHTHA

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 50-52 450 end point (Naphtha) | .10 | .10¼ | .10½ | | .10⅜ | .10¾ |
| 56-58 450 end point | .10 | .10¼ | .10¼ | .10⅜ | .10½ | |
| 58-60 450 end point | .10⅛ | .10¼ | .10⅜ | .10½ | .10½ | .10⅝ |
| 58-60 437 end point (U. S. Motor) | .10¼ | .10½ | .10½ | .10⅝ | .10⅝ | .11 |
| 60-62 400 end point | .10⅜ | .11 | .11 | .11¼ | .11¼ | .11⅜ |
| 64 66 375 end point | .11 | .11¼ | .11½ | .11⅜ | .11⅜ | .12 |
| 68-70 360 end point | .11⅜ | .12 | .12 | .12⅛ | .12 | .12⅛ |
| **KANSAS—** | | | | | | |
| 58-60 437 end point (U. S. Motor) | .10⅜ | .10⅞ | .11 | .11¼ | .11⅛ | .11⅜ |
| **NORTH TEXAS—** | | | | | | |
| 48-50 450 end point (Naphtha) | .10 | | .10⅜ | .10½ | .10⅝ | .10¾ |
| 50-52 450 end point (Naphtha) | .10 | .10⅛ | .10⅜ | .10½ | .10⅝ | .10¾ |
| 56-58 450 end point | .10 | .10⅛ | .10⅛ | .10⅜ | .10¼ | .10⅜ |
| 58-60 437 end point (U. S. Motor) | .10⅛ | .10⅜ | .10⅜ | .10⅝ | .10½ | .10⅞ |
| 60-62 400 end point | .10⅝ | .10⅜ | .10⅞ | .11⅛ | .11¼ | |
| 64 66 390 end point | .10¾ | .10⅞ | .11¼ | .11⅜ | .11⅝ | .11⅝ |
| 64-66 375 end point | .10⅞ | .11⅛ | .11⅜ | .11½ | .11⅝ | .11¾ |
| 68-70 360 end point | .11¾ | | .12 | | .12 | .12⅛ |
| **NORTH LOUISIANA—** | | | | | | |
| 58-60 437 end point (U. S. Motor) | .10¼ | .10¾ | .10⅞ | .11 | .11 | .11¼ |
| **ARKANSAS—** | | | | | | |
| 58-60 437 end point (U. S. Motor) | .10¼ | .10½ | .10⅞ | .11⅛ | .11 | .11¼ |
| **ROCKY MOUNTAIN STATES—** | | | | | | |
| *58-60 437 end point (U. S. Motor) | .13¼ | .13½ | .13½ | .13¾ | .13⅝ | .14 |
| **PENNSYLVANIA—** | | | | | | |
| 52 Naphtha | .12½ | .12⅝ | .12½ | .12¾ | .12½ | .12¾ |
| 54 Naphtha | .12⅝ | .12⅞ | .12¾ | .13 | .12¾ | .13 |
| 56 Gasoline | .12¾ | .13 | .13 | .13¼ | .13 | .13¼ |
| 58 Gasoline | .13 | .13¼ | .13¼ | .13½ | .13¼ | .13½ |
| 60 Gasoline | .13¼ | .13½ | .13½ | .13¾ | .13½ | .13⅝ |
| 62 Gasoline | .14 | .14¼ | .14½ | .14¾ | .14½ | .14¾ |
| 64 Gasoline | .14½ | .14¾ | .14¾ | .15 | .14¾ | .15 |
| 66 Gasoline | .15½ | .15¾ | .15¾ | .16 | .15¾ | .16 |
| 68-70 Gasoline | .17⅝ | .17¾ | .17¾ | .18 | .17¾ | .18 |
| **CALIFORNIA—** | | | | | | |
| 54-58 437 end point (U. S. Motor) domestic | .12 | .12½ | .12 | .12½ | .12 | .12½ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 50 52 450 end point (Naphtha) | .10¼ | .10½ | .10½ | | .10¾ | |
| 56-58 450 end point | .10¼ | | .10¼ | .10½ | .10½ | .10⅝ |
| 58-60 437 end point (U. S. Motor) | .10⅜ | .10½ | .10⅜ | .11 | .11 | |
| 60-62 400 end point | .11 | .11¼ | .11¼ | .11½ | .11½ | .11⅝ |
| 64-66 375 end point | .11½ | .11¾ | .11⅜ | .12 | .11⅞ | .12 |
| 68-70 360 end point | .12 | | .12 | .12¼ | .12¼ | |

*Colorado points.

## NATURAL GASOLINE

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .09⅝ | .09¾ | .10¼ | | .10¼ | .10⅜ |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .09⅝ | .09¾ | .10¼ | | .10¼ | .10⅜ |
| Grade BB, 84-92, 375 e.p., rec. 85% | .09⅜ | .09½ | .10 | .10⅛ | .10⅛ | .10¼ |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .09⅜ | .09½ | .10 | .10⅛ | .10⅛ | .10¼ |
| Grade C, 80-90, 375 e.p., rec. 78% | .09¼ | | .09⅜ | .09⅞ | .09⅞ | .10 |
| **NORTH TEXAS—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .09¾ | | .10¼ | | .10¼ | .10¾ |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .09¾ | | .10¼ | | .10¼ | .10⅜ |
| Grade BB, 84-92, 375 e.p., rec. 85% | .09⅜ | .09½ | .10 | .10⅛ | .10⅛ | .10¼ |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .09⅜ | .09½ | .10 | .10⅛ | .10⅛ | .10¼ |
| Grade C, 80-90, 375 e.p., rec. 78% | .09¼ | | .09⅜ | .10 | .10 | |
| **NORTH LOUISIANA—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .10½ | .10⅝ | .10⅜ | .11 | .10⅞ | .11 |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .10⅜ | .10½ | .10⅝ | .10¾ | .10⅝ | .10⅞ |
| Grade C, 80-90, 375 e.p., rec. 78% | .10¼ | .10½ | .10½ | .10⅞ | .10½ | .10⅝ |
| **CALIFORNIA—** | | | | | | |
| 75-85, 375-390 end point | .15½ | .16 | .15½ | .16 | .15½ | .16 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .09¾ | .10 | .10¼ | .10⅜ | .10¼ | .10⅜ |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .09¾ | .10 | .10¼ | .10⅜ | .10¼ | .10⅜ |
| Grade BB, 84-92, 375 e.p., rec. 85% | .09½ | .09¾ | .10 | .10⅛ | .10 | .10¼ |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .09½ | .09¾ | .10 | .10⅛ | .10 | .10¼ |
| Grade C, 80-90, 375 e.p., rec. 78% | .09¼ | .09½ | .09¾ | .09⅞ | .09¾ | .10 |

## MOTOR NATURAL GASOLINE

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 60-62 450 end point | .10 | | .10¼ | | .10⅜ | .10½ |
| 64-66 437 end point | .10⅛ | .10¼ | .10¼ | .10⅜ | .10⅜ | .10¾ |
| **NORTH TEXAS—** | | | | | | |
| 64-66 437 end point | .10⅛ | .10¼ | .10¼ | | .10½ | .10¾ |
| **PENNSYLVANIA—** | | | | | | |
| *60-62 | .13 | .13¼ | .13 | .13¼ | .13 | .13¼ |
| *64-66 | .13¼ | .13½ | .13¼ | .13½ | .13¼ | .13½ |
| *66-68 | .13½ | .13¾ | .13½ | .13¾ | .13½ | .13¾ |
| *68-70 | .13½ | .13¾ | .13½ | .13¾ | .13½ | .13¾ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 60-62 450 end point | .10 | | .10¼ | | .10¼ | |
| 64-66 437 end point | .10¼ | | .10½ | | .10½ | |

*At Sistersville, W. Va.

## BURNING OIL

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| **KANSAS—** | | | | | | |
| 41 43 water white Kerosene | .08½ | .08¾ | .09 | .09¼ | .09⅜ | .09⅝ |
| **OKLAHOMA (Group 3)—** | | | | | | |
| 41-43 water white Kerosene | .07¾ | .08¼ | .08⅝ | .08¾ | .09¼ | .09½ |
| 42-44 water white Kerosene | .08⅜ | .08½ | .09¼ | .09½ | .09⅞ | .10 |
| **NORTH LOUISIANA—** | | | | | | |
| 41-43 prime white Kerosene | .09 | .09¼ | .09¼ | .09½ | .09½ | .09¾ |
| **ROCKY MOUNTAIN STATES—** | | | | | | |
| *40-41 water white Kerosene | .10¾ | .11 | .11⅝ | .11¾ | .12¼ | .12½ |
| **NORTH TEXAS—** | | | | | | |
| 41-43 water white Kerosene | .07¾ | .08 | .08¼ | .08½ | .09⅛ | .09¼ |
| **ARKANSAS—** | | | | | | |
| 41-43 water white Kerosene | .09 | .09¼ | .09¼ | .09½ | .09½ | |
| **PENNSYLVANIA—** | | | | | | |
| 43 Kerosene prime white | .09¾ | .10 | .09¾ | .10 | .09¾ | .10 |
| 45 Kerosene water white | .10 | .10¼ | .10 | .10¼ | .10¼ | .10½ |
| 46 Kerosene water white | .10¼ | .10½ | .10¾ | .11 | .11 | .11¼ |
| 47 Kerosene water white | .10¾ | .11 | .11 | .11¼ | .11¼ | .11½ |
| 34 Neutral | .07½ | .07¾ | .07½ | .07¾ | .07½ | .07¾ |
| 34 Sundebloom Neutral | .08½ | .08¾ | .08½ | .08¾ | .08½ | .08¾ |
| 36 Miners' Neutral | .07¼ | .07½ | .07¼ | .07½ | .07¼ | .07½ |
| 300 Mineral Seal | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| **CALIFORNIA—** | | | | | | |
| 38-40 water white (high burning test) | .07½ | .08 | .07½ | .08 | .07½ | .08 |
| Engine distillate, 43-45 445 end point | .09¾ | .10 | .09¾ | .10 | .09¾ | .10 |
| Engine distillate, 42 44 480 end point | .09¼ | .09½ | .09¼ | .09½ | .09¼ | .09½ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 41-43 water white Kerosene | .08 | .08¼ | .08¾ | .09 | .09½ | |
| 42-44 water white Kerosene | .08½ | | .09½ | .09¾ | .10 | .10¼ |

*Colorado points.

## FUEL OILS

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| **KANSAS—** | | | | | | |
| 24-26 Fuel Oil | 1.50 | | 1.50 | 1.55 | 1.55 | 1.60 |
| 32-36 Gas Oil | .04⅝ | .04¾ | .04⅝ | .04¾ | .04⅝ | .04¾ |
| 38-40 Distillate | .05¾ | .06 | .05⅞ | .06 | .05⅞ | .06 |
| **OKLAHOMA (Group 3)—** | | | | | | |
| Below 22 Fuel Oil (sellers' cars) | 1.27½ | 1.30 | 1.30 | 1.32½ | 1.32½ | 1.35 |
| 22-26 Fuel Oil (sellers' cars) | 1.32½ | 1.35 | 1.35 | | 1.37½ | 1.40 |
| 24-26 Fuel Oil (sellers' cars) | 1.37½ | 1.40 | 1.40 | 1.42½ | 1.45 | 1.47½ |
| 26 30 Fuel Oil (sellers' cars) | 1.45 | 1.50 | 1.50 | 1.55 | 1.60 | |
| 28-30 Fuel Oil (sellers' cars) | 1.55 | 1.60 | 1.57½ | 1.60 | 1.65 | 1.70 |
| 32-36 Gas Oil (cracking stock) | .04⅛ | .04⅜ | .04¼ | .04⅜ | .04¼ | .04½ |
| 36-38 Distillate | .05⅜ | .05⅝ | .05⅜ | .05⅝ | .05½ | .05¾ |
| 38-40 Straw Distillate | .05⅝ | .05⅞ | .05⅝ | .05⅞ | .05½ | .05⅝ |
| **NORTH TEXAS—** | | | | | | |
| 24-26 Fuel Oil (sellers' cars) | 1.45 | | 1.45 | 1.47½ | 1.50 | |
| 32-36 Gas Oil (straw) | .04 | .04¼ | .04⅛ | .04¼ | .04¼ | .04½ |
| 38-40 Straw Distillate | .05⅜ | .05⅝ | .05⅜ | .05⅝ | .05¼ | .05½ |
| **NORTH LOUISIANA—** | | | | | | |
| 18-20 Fuel Oil | 1.27½ | 1.30 | 1.35 | | 1.35 | 1.40 |
| 32-36 Gas Oil (straw) | .04¼ | .04½ | .04¾ | 05 | .04¾ | .05 |
| 32-36 Gas Oil (dark) | .04 | .04¼ | .04½ | .04¾ | .04½ | .04¾ |
| 36-38 Distillate | .05 | .05¼ | .05 | .05¼ | .05 | .05¼ |
| **ARKANSAS—** | | | | | | |
| 38-40 Distillate | .05½ | .05¾ | .05½ | .05¾ | .05¼ | .05½ |
| 32-36 Gas Oil (straw) | .04¼ | .04½ | .04½ | .04¾ | .04¾ | .05 |
| 16-20 Refinery Fuel Oil | 1.25 | | 1.25 | | 1.25 | 1.30 |
| **GULF COAST (South Texas)—** | | | | | | |
| Gas Oil | .05½ | .05⅝ | .05⅝ | .05¾ | .05⅝ | .05¾ |
| Fuel Oil | 1.75 | 1.85 | 1.75 | 1.85 | 1.75 | 1.85 |
| **PENNSYLVANIA—** | | | | | | |
| 30 34 Fuel Oil | .06 | .06¼ | .05¾ | .05⅞ | .05¾ | .05⅞ |
| 36-40 Fuel Oil | .06½ | .06¾ | .06½ | .06⅝ | .06½ | .06⅝ |
| **CALIFORNIA—** | | | | | | |
| 33-36 Distillate | .04 | .04¾ | .04 | .04¾ | .04 | .04¾ |
| 27-32 Distillate | .03¾ | .04 | .03¾ | .04 | .03¾ | 04 |
| 15-20 Fuel Oil (at tide water) | 1.00 | 1.04 | 1.00 | 1.04 | 1.00 | 1.04 |
| 27 plus Diesel | 1.15 | 1.19 | 1.15 | 1.19 | 1.15 | 1.19 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 24-26 Fuel Oil (sellers' cars) Group 3 | 1.40 | 1.45 | 1.42½ | 1.45 | 1.45 | 1.50 |
| 22-26 Fuel Oil (sellers' cars) Group 3 | 1.35 | 1.40 | 1.37½ | 1.42½ | 1.40 | 1.45 |
| 18-22 (Group 3) | 1.30 | 1.35 | 1.35 | 1.37½ | 1.35 | 1.40 |
| 18-20 (Smackover) | 1.27½ | 1.32½ | 1.25 | 1.30 | 1.25 | 1.30 |
| 32 36 Gas Oil | .04⅛ | .04¼ | .04¼ | .04⅜ | .04¼ | .04⅜ |
| 36-38 Distillate | .05½ | .05¾ | .05½ | .05¾ | .05¼ | .05½ |
| 38-40 Straw Distillate | .05¾ | .06 | .05¾ | .06 | .05½ | .06 |

## LUBRICATING OILS AND WAX

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 70-80 vis., 2½ color, 20-25 cold test | .06 | .07 | .06 | .07 | .06 | .07 |
| 100 vis., 2 color, 20-25 cold test | .07 | .07½ | .07 | .07½ | .07 | .07½ |
| 100 vis., 3 color, 20-25 cold test | .06½ | .07 | .06½ | .07 | .06½ | .07 |
| 150 vis., 3 color, 20-25 cold test | .09½ | .10 | .09½ | .10 | .09½ | .10 |
| 150 vis., 4 color, 20-25 cold test | .09¾ | | .09¾ | | .09¾ | |
| 180 vis., 3 color, 23 28 cold test | .10½ | .11½ | .10½ | .11½ | .10½ | .11½ |
| 180 vis., 4 color, 23-28 cold test | .10 | .10½ | .10 | .10½ | .10 | .10½ |
| 200 vis., 3 color, 23-28 cold test | .10¾ | .12¼ | .10¾ | .12¼ | .10¾ | .12¼ |
| 200 vis., 4 color, 23-28 cold test | .11¼ | .11½ | .11¼ | .11½ | .11¼ | .11½ |
| 220 vis., 3 color, 25-30 cold test | .13 | .13½ | .13 | .13½ | .13 | .13½ |
| 220 vis., 3 color, 25-30 cold test | .13 | | .13 | | .13 | |
| 240 vis., 3 color, 25-30 cold test | .14 | .15 | .14 | .15 | .14 | .15 |
| 240 vis., 4 color, 25-30 cold test | .14 | .14½ | .14 | .14½ | .14 | .14½ |
| 280 vis., 3 color, 25-30 cold test | .16 | .17 | .16 | .17 | .16 | .17 |
| 280 vis., 4 color, 25 30 cold test | .15 | .16½ | .15½ | .16½ | .15½ | .16½ |
| 180 vis., 5 color, 23-28 cold test | .09¾ | .10¼ | .09¾ | .10¼ | .09¾ | .10¼ |
| 200 vis., 5 color, 23-28 cold test | .10 | .11¼ | .10 | .11¼ | .10 | .11¼ |
| 220 vis., 5 color, 25-30 cold test | .12 | .12¼ | .12 | .12¼ | .12 | .12¼ |
| 240 vis., 5 color, 25-30 cold test | .13 | .14 | .13 | .14 | .13 | .14 |
| 280 vis., 5 color, 25-30 cold test | .15 | .16 | .15 | .16 | .15 | .16 |
| Cylinder Stocks: | | | | | | |
| 600, steam refined, dark green | .08 | .11 | .08 | .11 | .08 | .11 |
| 600, steam refined, light green | .06 | .07 | .06 | .07 | .06 | .07 |
| 190-200 vis. @ 210 "D" Bright Stock | .33 | .35 | .33 | .35 | .33 | .35 |
| 150 vis. @ 210 "D" Bright Stock | .28 | .31 | .28 | .31 | .28 | .31 |
| 200-210 vis. @ 210 "E" Bright Stock | .30 | .31 | .30 | .31 | .30 | .31 |
| 150 vis. @ 210 "E" Bright Stock | .27 | .28 | .27 | .28 | .27 | .28 |
| Waxes: | | | | | | |
| 124-126 White Crude Scale Wax | .04¾ | | .04¾ | | .04¾ | |
| **PENNSYLVANIA—** | | | | | | |
| 150, 3 color | .23¼ | | .23¼ | | .23¼ | |
| 180, 3 color | .26½ | | .26½ | | .26½ | |
| 200, 3 color | .30 | | .29 | | .29 | |
| 220, 3 color | .31 | | .31 | | .31 | |
| 600, steam refined | .12¼ | | .12½ | | .12½ | |
| 635, steam refined | .15½ | | .15½ | | .15½ | |
| 650, steam refined | .17 | | .17¼ | | .17¼ | |
| 600, Pennsylvania flash | .21 | | .21 | | .21 | |
| 630, Pennsylvania flash | .32½ | | .32½ | | .32½ | |
| *550, E filtered | .19 | | .19 | | .19 | |
| 600, E filtered | .21½ | | .21½ | | .21½ | |
| *600, E filtered | .21½ | | .21½ | | .21½ | |
| 600, D filtered | .27 | | .27 | | .27 | |

# REFINERY AND CRUDE PRICES

**Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields**

| | | | | | | |
|---|---|---|---|---|---|---|
| 550, E filtered | .18 | | .18 | | .18 | |
| 550, D filtered | .22 | | .22 | | .22 | |
| Pennsylvania Bright Stock | .41½ | | .41½ | | .41½ | |
| 122 124 White Crude Scale Wax | .05⅛ | .05¼ | .05¼ | .05⅜ | .05¼ | .05⅜ |
| †124-126 White Crude Scale Wax | .05¼ | .05½ | .05½ | .05¾ | .05½ | .05¾ |

*At Warren, Pa. †At New York City.

| GULF COAST (South Texas)— | | | | | | |
|---|---|---|---|---|---|---|
| Zero Black | .06 | .07 | .06 | .07 | .06 | .07 |
| No. 2 color, 100 vis., pale oil | .08½ | .09 | .08½ | .09 | .08½ | .09 |
| No. 3 color, 200 vis., pale oil | .11 | .12 | .11½ | .12 | .11½ | .12 |
| No. 3½ color, 300 vis., pale oil | .12 | .13 | .12½ | .13 | .12½ | .13 |
| No. 3¾ color, 500 vis., pale oil | .14 | .15 | .14 | .14½ | .14 | .14½ |
| No. 4 color, 750 vis., pale oil | .17 | .18 | .17½ | .18½ | .17½ | .18½ |
| No. 2 plus color, 200 vis., pale filtered | .21½ | | .21½ | | .21½ | |
| No. 2 color, 300 vis., pale filtered | .24½ | | .24½ | | .24½ | |
| No. 2½ color, 500 vis., pale filtered | .27½ | | .27½ | | .27½ | |
| No. 2½ color, 750 vis., pale filtered | .35½ | | .35½ | | .35½ | |
| No. 5 to 6 color, 200 vis., red oil | .10 | .10½ | .10 | .10½ | .10 | .10½ |
| No. 5 to 6 color, 300 vis., red oil | .11½ | .12 | .11½ | .12 | .11½ | .12 |
| No. 5 to 6 color, 500 vis., red oil | .12½ | .13 | .12½ | .13 | .12½ | .13 |
| No. 5 to 6 color, 750 vis., red oil | .16½ | .17 | .16½ | .17 | .16½ | .17 |
| CALIFORNIA— | | | | | | |
| 150 vis., 2½-3 color | .10 | .11½ | .10 | .11½ | .10 | .11½ |
| 200 vis., 2½-3 color | .13½ | .14½ | .13½ | .14½ | .13½ | .14½ |
| 300 vis., 3 -3½ color | .15 | .16 | .15 | .16 | .15 | .16 |
| 350 vis., 3½-4 color | .15½ | .17½ | .15½ | .17½ | .16½ | .17½ |
| 400 vis., 3½-4 color | .18 | .19 | .18 | .19 | .18 | .19 |
| Red Neutrals: | | | | | | |
| 200 vis., 3½-5 color | .12 | .13 | .12 | .13 | .12 | .13 |
| 300 vis., 5 -6 color | .13 | .14 | .13 | .14 | .13 | .14 |
| 400 vis., 5 -6 color | .15 | .16 | .15 | .16 | .15 | .16 |
| 500 vis., 4½-5 color | .18 | .19 | .18 | .19 | .18 | .19 |
| 500 vis., 6 -6½ color | .16 | .17 | .16 | .17 | .16 | .17 |
| 600 vis., 6½ plus color | .17 | .18 | .17 | .18 | .17 | .18 |

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

## NEW YORK (BAYONNE) REFINERY PRICES

| | Sept. 28 | Sept. 21 | Sept. 14 |
|---|---|---|---|
| Gasoline: | | | |
| U. S. Motor, 58-60 437 | .13 | .13 | .13 |
| Export, 64-66 375 | .15 | .15 | .15 |
| Kerosene, prime white, 41-43 | .10⅞ | .11 | .11 |
| *Bunker Oil "C" 14-16, per bbl. | 1.75 | 1.75 | 1.75 |
| *Diesel Oil, 28-30, per bbl. | 2.50 | 2.50 | 2.50 |
| Gas Oil, 28 plus | .06¾ | .06¾ | .06¾ |
| Furnace Oil (tankwagon) | .12 | .12 | .12 |
| Cylinder Oil, light filtered, 600 s.r. | .29 | .29 | .29 |
| Bright Stock, No. 5, 150 vis., at 212 F. | .42 | .42 | .42 |
| White Neutral, No. 1, 170 vis., 1 color | .37 | .37 | .37 |
| Spindle Oil, No. 1 red, 230 vis., 5½ color | .17½ | .17½ | .17½ |
| Pale Oil, "25," 170 vis., 3½ color | .13 | .13 | .13 |
| Pale Oil, "28," 100 vis., 2 color | .08 | .08 | .08 |
| Red Oil: | | | |
| No. 3, 160 vis., 7 color | .11 | .11 | .11 |
| No. 2, 212 vis., 5½ color | .12 | .12 | .12 |
| No. 1, 265 vis., 5½ color | .13½ | .13½ | .13½ |
| Polar, 295 vis., 6 color | .14 | .14 | .14 |
| Paraffin Wax, refined: | | | |
| 120-122 a.m.p., per lb. | .05⅞ | .05⅞ | .05⅞ |
| 125-127 a.m.p., per lb. | .06 | .06 | .06 |
| 130-132 a.m.p., per lb. | .06½ | .06½ | .06½ |
| 135-137 a.m.p., per lb. | .06¾ | .06¾ | .06¾ |
| Petrolatum, in bbls., per lb.: | | | |
| Dark green | .02 | .01⅞ | .01⅞ |
| Amber | .03¼ | .03¼ | .03¼ |
| Cream | .05¾ | .05¾ | .05¾ |
| Lily white | .07⅞ | .07⅞ | .07⅞ |
| Snow white | .08¾ | .08¾ | .08¾ |

*Lighterage 5.5c a barrel extra.

## NEW YORK CASE EXPORT PRICES

| | Sept. 28 | Sept. 21 | Sept. 14 |
|---|---|---|---|
| Gasoline, U. S. Motor, 58-60 | .28.40 | .28.90 | .28.90 |
| Kerosene: | | | |
| Standard white Kerosene | .19.65 | .19.65 | .19.65 |
| Water white Kerosene | .21.15 | .21.15 | .21.15 |

## LOS ANGELES EXPORT PRICES

| | Sept. 28 | | Sept. 21 | | Sept. 14 | |
|---|---|---|---|---|---|---|
| Kerosene water white | .05½ | .06½ | .05½ | .06½ | .05½ | .06½ |
| U. S. Motor Gasoline, 54-56 437 e.p. | .10 | .10½ | .10 | .10½ | .10 | .10½ |

## CRUDE OIL PRICES

### OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**
(Oklahoma, Kansas and North and East Central Texas)
(Effective May 15)

| | |
|---|---|
| 28° to 28.9° | $1.65 |
| 29° to 29.9° | 1.73 |
| 30° to 30.9° | 1.81 |
| 31° to 31.9° | 1.89 |
| 32° to 32.9° | 1.97 |
| 33° to 33.9° | 2.05 |
| 34° to 34.9° | 2.13 |
| 35° to 35.9° | 2.21 |
| 36° to 36.9° | 2.29 |
| 37° to 37.9° | 2.37 |
| 38° to 38.9° | 2.45 |
| 39° to 39.9° | 2.53 |
| 40° to 40.9° | 2.61 |
| 41° to 41.9° | 2.69 |
| 42° to 42.9° | 2.77 |
| 43° to 43.9° | 2.85 |
| 44° to 44.9° | 2.93 |
| 45° to 45.9° | 3.01 |
| 46° to 46.9° | 3.09 |
| 47° to 47.9° | 3.17 |
| 48° to 48.9° | 3.25 |
| 49° to 49.9° | 3.33 |
| 50° to 50.9° | 3.41 |
| 51° to 51.9° | 3.49 |
| 52° and above | 3.57 |

*Other major purchasers except as noted below.

**Champlin Refining Co.**
(Garber and Tonkawa)
(Effective May 15)

Schedule based on Prairie Oil & Gas Co. paying 10 cents additional for each grade of crude above 38° gravity.

**Humble Oil & Refining Co.**
(Effective May 15)
(North and East Central Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Big Lake, Nacona and Lytton Springs)

Same prices as Prairie Oil & Gas Co. schedule. Postings below 28° gravity 8 cents less for each degree, effective June 21.

**Magnolia Petroleum Co.**
(Effective May 15)
Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas)

| | |
|---|---|
| Below 28° | $1.30 |
| Other grades same as Prairie Oil & Gas Co. | |
| Iatan | $1.15 |
| Corsicana heavy | 1.25 |
| Panola County: | |
| 30° to 34.9° | $1.95 |
| 35° to 37.9° | 2.10 |
| 38° and above | 2.25 |

### TEXAS PANHANDLE

**Kay County Gas Co.**
(Effective May 15)

| | |
|---|---|
| 28° to 28.9° | $1.35 |
| 29° to 29.9° | 1.40 |
| 30° to 30.9° | 1.45 |
| 31° to 31.9° | 1.50 |
| 32° to 32.9° | 1.55 |
| 33° to 33.9° | 1.60 |
| 34° to 34.9° | 1.65 |
| 35° to 35.9° | 1.70 |
| 36° to 36.9° | 1.75 |
| 37° to 37.9° | 1.80 |
| 38° to 38.9° | 1.85 |
| 39° and above | 1.90 |

**Humble Oil & Refining Co.**
(Effective Sept. 22)

| | |
|---|---|
| Carson-Hutchinson Counties | $1.25 |
| Other Fields— | |
| (Effective June 21) | |
| 39° to 39.9° | $1.90 |
| 40° to 40.9° | 1.95 |
| 41° to 41.9° | 2.00 |
| 42° to 42.9° | 2.05 |
| 43° to 43.9° | 2.10 |
| 44° and above | 2.15 |

Grades below 39° gravity same as posted by the Kay County Gas Co.

**Magnolia Petroleum Co.**
(Effective September 22)

| | |
|---|---|
| All Fields | $1.25 |

### WEST TEXAS

Crockett County (Aug. 11)

| | |
|---|---|
| Below 26° | $1.20 |
| 26° to 26.9° | 1.25 |
| 27° to 27.9° | 1.30 |
| 28° to 28.9° | 1.35 |
| 29° to 29.9° | 1.40 |
| 30° to 30.9° | 1.45 |
| 31° to 31.9° | 1.50 |
| 32° to 32.9° | 1.55 |
| 33° to 33.9° | 1.60 |
| 34° to 34.9° | 1.65 |
| 35° to 35.9° | 1.70 |
| 36° and above | 1.75 |

Crane-Upton Counties (Sept. 15)

| | |
|---|---|
| Below 26° | $ .80 |
| 26° to 26.9° | .85 |
| 27° to 27.9° | .90 |
| 28° to 28.9° | .95 |
| 29° to 29.9° | 1.00 |
| 30° to 30.9° | 1.05 |
| 31° to 31.9° | 1.10 |
| 32° to 32.9° | 1.15 |
| 33° to 33.9° | 1.20 |
| 34° to 34.9° | 1.25 |
| 35° to 35.9° | 1.30 |
| 36° and above | 1.35 |

### GULF COAST

***Humble Oil & Refining Co.**
(Effective August 30)

| | |
|---|---|
| Grade A | $1.40 |
| Grade B— | |
| Below 25° | 1.40 |
| 25° to 25.9° | 1.45 |
| 26° to 26.9° | 1.50 |
| 27° to 27.9° | 1.55 |
| 28° to 28.9° | 1.60 |
| 29° to 29.9° | 1.65 |
| 30° to 30.9° | 1.70 |
| 31° to 31.9° | 1.75 |
| 32° to 32.9° | 1.80 |
| 33° to 33.9° | 1.85 |
| 34° to 34.9° | 1.90 |
| 35° and above | 1.95 |
| Spindletop | |
| Grade A | $1.25 |
| Grade B— | |
| Below 25° | 1.25 |
| 25° to 25.9° | 1.30 |
| 26° to 26.9° | 1.35 |
| 27° to 27.9° | 1.40 |
| 28° to 28.9° | 1.45 |
| 29° to 29.9° | 1.50 |
| 30° to 30.9° | 1.55 |
| 31° to 31.9° | 1.60 |

*All major purchasers except as noted below. Sun Pipe Line Co. prices effective September 1.

**The Texas Company**
(Effective August 30)

| | |
|---|---|
| Grade A | $1.40 |
| Grade B | 1.40 |
| †Light Crude— | |
| 35° to 35.9° | 1.95 |
| 36° to 36.9° | 2.00 |
| 37° to 37.9° | 2.05 |
| 38° to 38.9° | 2.10 |
| 39° to 39.9° | 2.15 |
| 40° and above | 2.20 |

†The Texas Company's postings on light crude under 35° gravity are same as Humble Oil & Refining Co.'s grades and prices for Grade B crude. Spindletop prices same as for Humble Oil & Refining Co., but classified according to The Texas Company's general schedule to 31° to 31.9° crude.

### SOUTH CENTRAL AND SOUTHWESTERN TEXAS

***Magnolia Petroleum Co.**

| | |
|---|---|
| Luling (contract) (Eff. May 18) | $1.30 |
| Mirando (Webb, Jim Hogg and Zapata Counties) (May 15) | 1.25 |
| Rockdale-Minerva (Milam County) | 1.25 |
| Thrall | 1.00 |
| Calliham (Live Oak and McMullen Counties) (May 15) | 1.75 |
| §Lockhart (Lytton Springs) | |
| Somerset (Grayburg Pipe Line Co.): | |
| (Effective May 17) | |
| 28.° to 28.9° | $1.25 |
| 29° to 29.9° | 1.35 |
| 30° to 30.9° | 1.71 |
| 31° to 31.9° | 1.89 |
| 32° to 32.9° | 1.97 |
| 33° to 33.9° | 2.05 |
| 34° to 34.9° | 2.13 |
| 35° to 35.9° | 2.20 |
| 36° to 36.9° | 2.29 |
| 37° to 37.9° | 2.37 |
| 38° and above | 2.45 |

*Texpata Pipe Line Co. and Humble Pipe Line Co. also post in Mirando Field.

§Lockhart prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co.

### ARKANSAS AND NORTH LOUISIANA

**Standard Oil Co. of Louisiana**
(Effective May 18)

| | |
|---|---|
| Caddo: | |
| Below 26° (July 24) | $1.40 |
| 26° to 28.9° (July 24) | 1.55 |
| 29° to 31.9° (July 24) | 1.70 |
| 32° to 34.9° | 2.25 |
| 35° to 37.9° | 2.35 |
| 38° and above | 2.45 |
| Homer below 31° | 1.85 |
| 31° to 32.9° | 2.00 |
| 33° to 34.9° | 2.10 |
| 35° and above | 2.20 |
| Haynesville below 33° | 2.00 |
| 33° and above | 2.10 |
| El Dorado below 33° | 2.00 |
| 33° to 34.9° | 2.10 |
| 35° to 36.9° | 2.20 |
| 37° and above | 2.30 |
| Bull Bayou, 32° to 34.9° | 1.95 |
| 35° to 37.9° | 2.10 |
| 38° and above | 2.25 |
| Cotton Valley | 1.20 |
| DeSoto | 2.30 |
| Crichton | 2.10 |
| Bellevue | 1.40 |
| Smackover, below 24° | 1.10 |
| 24° to 24.9° | 1.35 |
| 25° to 25.9° | 1.40 |
| 26° to 26.9° | 1.45 |
| 27° and above | 1.50 |
| *Stephens, Ark., below 26° | 1.45 |
| 26° and above | 1.65 |
| †Calion (East El Dorado) | 1.10 |
| §Urania (August 26) | 1.10 |

Other companies posting in these fields are: Gulf Pipe Line Co.; Atlantic Oil Producing Co. in Homer Haynesville, El Dorado and Smackover; The Texas Company in Caddo, Bull Bayou, DeSoto, Crichton and Smackover.

*Posted by the Atlantic Oil Producing

(Continued on Page 132)

# TANK WAGON MARKETS

Tankwagon quotations for gasoline and kerosene in United States as furnished by the larger marking concerns, Sept. 28.

## ALL TANKWAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

### STANDARD OIL CO. (INDIANA)

**Main Service Station Price**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Chicago Dist.— | | | | |
| †Less than 100 gals. | 19.0 | 21.0 | ... | 16 5 |

Tank wagon prices on April 19, 1922: g. up 1¼c; May 8, up 1c; June 27, g. and k. up 1c; July 19, g. down 2c; k. down 1c; Oct. 16, g. down 2c; Oct. 21, g. down 1c; Feb. 6, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.5c; Oct. 4, k. down 3½c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c; k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25 g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c; k. up 1c; April 16, 1926, k. up 1c; April 24, 1926, k. up ½c; April 29, 1926, g. up 1c, k. up ½c; May 6, 1926, k. up ¼c; May 17, g. and k. up 1c; July 1, k. down 1c; July 3, k. down 1c; Aug. 13, k. up 1c; Aug. 24, k. up 1c.

| | | | | |
|---|---|---|---|---|
| Decatur, Ill. | 19 2 | 21 2 | ... | 16 0 |
| E. St. Louis | 18 1 | 20.35 | ... | 15 1 |
| Joliet | 19 4 | 21.4 | ... | 16 2 |
| Peoria | 19 2 | 21 2 | ... | 16 0 |
| Quincy | 19.2 | 21.2 | ... | 15 8 |
| Davenport, Ia. | 21 5 | 23.5 | 2 0 | 16 4 |
| Des Moines | 21.5 | 23 5 | 2 0 | 16 4 |
| Keokuk | 21 5 | 23 5 | 2 0 | 16 4 |
| Sioux City | 18.9 | 20.9 | 2.0 | 16.0 |
| Duluth, Minn. | 22.5 | 24.5 | 2.0 | 17 1 |
| Minneapolis | 22 2 | 24 2 | 2.0 | 17 1 |
| La Crosse, Wis. | 22 2 | 24 2 | 2 0 | 16.9 |
| Milwaukee | 21 1 | 23 1 | 2 0 | 16 8 |
| Madison | 21 3 | 23 3 | 2 0 | 16 8 |
| Detroit, Mich. | 21.8 | 23.8 | 2 0 | 16 7 |
| Grand Rapids | 21 7 | 23 7 | 2 0 | 16.8 |
| Saginaw | 21 9 | 23 9 | 2 0 | 16 8 |
| Evansville, Ind. | 22 0 | 24.0 | 3 0 | 16 0 |
| Ft. Wayne | 22 4 | 24 4 | 3 0 | 16.4 |
| Indianapolis | 22.2 | 24.2 | 3 0 | 16 2 |
| South Bend | 22.4 | 24.4 | 3.0 | 16.4 |
| Fargo, N. D. | 23 9 | 25 9 | 2 0 | 19 1 |
| Huron, S. D. | 23 5 | 25 5 | 3.0 | 17 6 |
| Sioux Falls | 22.0 | 24 0 | 3 0 | 17 1 |
| *K. C., Mo. | 21 9 | 23 9 | 3.0 | 14.8 |
| *Springfield | 21 8 | 23 8 | 3 0 | 15 7 |
| *St. Louis | 20 6 | 22 9 | 2 5 | 15 5 |
| *St. Joseph | 21 0 | 23 0 | 2 5 | 15 4 |
| ‡Wichita, Kan. | 19 8 | 21.8 | 2.0 | 15.3 |
| Bartlesville, Ok. | 20 8 | 22 8 | 3 0 | 15 3 |

**NAPHTHAS**

| | Tank wagon | Tank car |
|---|---|---|
| Oleum spirits | 21.0 | 15.0 |
| V. M. & P. naphtha | 23 9 | 16 5 |
| Cleaners naphtha | 21 0 | 17 5 |

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 18.0.
‡At all Kansas points a discount of 1 cent a gallon is allowed from the tankwagon postings on dumps of 50 gallons or more.

The following monthly rebate system is effective on tankwagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 6,000 gallons 1½c; over 10,000 gallons, 2c. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

**STANDARD FURNACE OIL**
**(Standard Oil Co. of Indiana)**

| | |
|---|---|
| Less than 100 gallons | 10 0 |
| 100 to 399 gallons | 9 5 |
| 400 or more gallons | 9.0 |

### SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Dallas, Tex. | ‡17.0 | 17.0 | 1.0 | 15.0 |
| Fort Worth | ‡17.0 | 17.0 | 1.0 | 15.0 |
| Houston | ‡21.0 | 21.0 | 1.0 | 15.0 |
| San Antonio | ‡19.0 | 19.0 | 1.0 | 15.0 |
| El Paso | ‡21 0 | 21 0 | 1 0 | 16 0 |
| Texarkana | ‡21.0 | 21.0 | 1.0 | 15 0 |
| Muskogee, Ok. | 20.0 | 23 0 | 3.0 | 13 0 |
| Oklahoma City | 18.0 | 21.0 | 3.0 | 15.0 |
| Tulsa | 20.0 | 23.0 | 3.0 | 15.0 |
| Little Rock | 22 0 | 25 0 | 4 0 | 15 5 |
| Ft. Smith, Ark. | 22.0 | 25.0 | 4 0 | 15 5 |

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ¼c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 8,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

†Magnolia maintains only a retail schedule in Texas with dealers and large consumers allowed a flat 3-cent discount, except at El Paso where the discount is only 2 cents.

### CENTRAL SOUTH DISTRICT

**Standard Oil Co. (Louisiana)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| *New Orleans | 20 5 | 23 5 | 3 0 | 16 0 |
| Alexanderia | 20 0 | 23 0 | 2 0 | 17.0 |
| Baton Rouge | 19.0 | 22 0 | 2 0 | 15 5 |
| LaFayette | 20.0 | 23 0 | 2 0 | 16 5 |
| Lake Charles | 20 5 | 23 5 | 2 0 | 17 5 |
| Shreveport, La. | 19 0 | 22 0 | 2.0 | 16 0 |
| Memphis, Tenn. | 20 0 | 23 0 | 3.0 | 17 0 |
| Chattanooga | 23 5 | 26.5 | 3 0 | 17 5 |
| Knoxville | 23 5 | 26.5 | 3 0 | 18 0 |
| Nashville | 21 0 | 24 0 | 3 0 | 18.0 |
| Bristol | 24 0 | 27 0 | 3 0 | 17.5 |
| Little Rock Ark | 22.0 | 25 0 | 4 0 | 16 0 |

*Tax of 3c includes city tax of 1c.
*Louisiana kerosene prices include 1-cent State tax.

### SOUTHERN DISTRICT

**Standard Oil Co. (Kentucky)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Atlanta, Ga. | 25.0 | 28 0 | 3 5 | 19 0 |
| Augusta | 25 0 | 28 0 | 3 5 | 19 0 |
| Macon | 25.0 | 28 0 | 3 5 | 19 0 |
| Savannah | 23 0 | 25 0 | 3 5 | 17 0 |
| Birm'ghm, Ala. | 22 0 | 25.0 | 2 0 | 18 5 |
| Mobile | 21 0 | 24 0 | 2 0 | 17 0 |
| Montgomery | 23 0 | 26 0 | 3 0 | 19 5 |
| Clarksdale, Miss | 23.0 | 26.0 | 4.0 | 15.5 |
| Jackson | 23 0 | 26 0 | 4 0 | 16 5 |
| Natchez | 22 5 | 25 5 | 4 0 | 16 0 |
| Vicksburg | 22 5 | 25 5 | 4.0 | 16 0 |
| Jack'ville, Fla. | 23 0 | 26 0 | 4 0 | 17 0 |
| Miami | 25.0 | 28 0 | 4 0 | 18 5 |
| Pensacola | 23 0 | 26 0 | 4 0 | 17 5 |
| Tampa | 23 0 | 26 0 | 4.0 | 17 0 |
| Covington | 24 0 | 27 0 | 5 0 | 18 0 |
| Louisville | 24 0 | 27 0 | 5 0 | 17 0 |
| Lexington, Ky. | 25 0 | 28 0 | 5 0 | 18.0 |

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only.

### ROCKY MOUNTAIN DISTRICT

**Continental Oil Co.**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Denver, Colo. | 22 0 | 22 0 | 2.0 | 18 0 |
| Pueblo | 22 0 | 24 0 | 2 0 | 18 0 |
| Grand Jct. | 26.0 | 28.0 | 2.0 | 22.0 |
| Casper, Wyo. | 22 5 | 24 5 | 2.5 | 16 5 |
| Cheyenne | 23.5 | 25 5 | 2 5 | 18 0 |
| Butte, Mont. | 24 0 | 24 0 | 2 0 | 20 5 |
| Helena | 26.0 | 28 0 | 2 0 | 20 5 |
| Salt Lake, Utah | 26 0 | 28 0 | 3.5 | 19 9 |
| Boise, Idaho | 27 0 | 29 0 | 3 0 | 21 0 |
| Albuquerque, N. Mex. | 28 5 | 28 5 | 3 0 | 20.0 |

### ATLANTIC COAST DISTRICT

**Standard Oil Co. (New Jersey)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Atlantic City | 19 0 | .... | ... | 17 0 |
| Newark, N. J. | 19 0 | 21 0 | ... | 17.0 |
| Annapolis, Md. | 21 0 | .... | 2 0 | 17 0 |
| Baltimore | 21 0 | 24 0 | 2 0 | 17.0 |
| Cumberland | 21 0 | 24.0 | 2.0 | 17 0 |
| Washington | 21 0 | 24 0 | 2 0 | 17.0 |
| Danville, Va. | 23 5 | .... | 4 5 | 17 0 |
| Norfolk | 23.5 | 26 5 | 4 5 | 17 0 |
| Petersburg | 23 5 | 26 5 | 4.5 | 17 0 |
| Roanoke | 23 5 | 26.5 | 4.5 | 17 0 |
| Richmond | 23 5 | 26 5 | 4.5 | 17 0 |
| Charleston, W. Va. | 21 5 | 24 5 | 3 5 | 17 0 |
| Keyser | 22 5 | .... | 3.5 | 17 0 |
| Parkersburg | 21 5 | 24.5 | 3.5 | 17 0 |
| Wheeling | 21 5 | 24 5 | 3.5 | 17 0 |
| Charlotte, N. C. | 23 5 | 26 5 | 4 0 | 17 0 |
| Hickory | 23 5 | .... | 4 0 | 17 0 |
| Mt. Airy | 23 5 | 26 5 | 4.0 | 17 0 |
| Salisbury | 23 5 | 26.5 | 4 0 | 17 0 |
| Charleston, S.C. | 24 5 | 27 5 | 5 0 | 17 0 |
| Columbia | 24 5 | 27 5 | 5 0 | 17.0 |

### NEW YORK AND PART OF NEW ENGLAND DISTRICT

**Standard Oil Co. (New York)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Albany, N. Y. | 17.0 | .... | ... | 18 0 |
| *New York | 21 0 | .... | ... | 18.0 |
| Buffalo | 20 0 | .... | ... | 18 0 |
| Rochester | 20.0 | .... | ... | 18.0 |
| Syracuse | 21 0 | .... | ... | 18 0 |
| Boston, Mass. | 21 0 | .... | ... | 18 0 |
| Augusta, Me. | 24 0 | .... | 3 0 | 18 0 |
| Manchester, N. H. | 23 0 | .... | 2 0 | 18 0 |
| Burlington, Vt. | 23 0 | .... | 2 0 | 18.0 |

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 to 3 cents higher than tankwagon price.

### NEBRASKA

**Standard Oil Co. (Nebraska)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| Omaha | 21.25 | 23 25 | 2 0 | 16.0 |
| McCook | 22 75 | 24 75 | 2 0 | 17 5 |
| Norfolk | 21.75 | 23 75 | 2 0 | 16 5 |
| N. Platte | 22 75 | 24.75 | 2 0 | 17 25 |
| Scottsbluff | 22 25 | 24.25 | 2 0 | 16.75 |

### PACIFIC COAST DISTRICT

**Standard Oil Co. (California)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| San Francisco | 18.0 | 22 0 | 2 0 | 14 5 |
| Los Angeles | 13.5 | 17.5 | 2.0 | 15.0 |
| Fresno | 18.5 | 22.5 | 2.0 | 17.5 |
| Reno, Nev. | 23 5 | 27 5 | 4 0 | 19.0 |
| Portland, Ore. | 19.0 | 23 0 | 3 0 | 16 5 |
| Seattle, Wash. | 18.0 | 22 0 | 2 0 | 16 5 |
| Spokane | 22 0 | 26.0 | 2 0 | 20 5 |
| Tacoma | 18 0 | 22 0 | 2.0 | 16 5 |
| Phoenix, Ariz. | 25 0 | 28.0 | 3 0 | 21 5 |

### PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

**Atlantic Refining Co.**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| *Pittsburgh, Pa | 20 0 | 25 0 | ... | 17 0 |
| *Philadelphia | 20 0 | 25 0 | ... | 17.0 |
| *Scranton | 20 0 | 25 0 | ... | 17 0 |
| *Allentown | 20 0 | 25 0 | ... | 17.0 |
| Altoona | 20.0 | 25 0 | ... | 17.0 |
| *Erie | 18 0 | 23 0 | ... | 15.0 |
| Dover, Del. | 22 0 | 25 0 | 2 0 | 17 0 |
| Wilmington | 22.0 | 25 0 | 2.0 | 17 0 |
| Spring'd, Mass. | 21 0 | 23 0 | ... | 18 0 |
| Worchester | 21.0 | 23 0 | ... | 18 0 |
| Boston | 21 0 | 23 0 | ... | 18 0 |
| Providence, R.I. | 22 0 | 24 0 | 1 0 | 18 0 |
| Hartford, Conn. | 23.0 | 26.0 | 2 0 | 17.0 |
| New Haven | 23.0 | 26 0 | 2 0 | 18.0 |

*Pennsylvania tax of 2c is collected by the dealer and paid by him direct to the State.

### OHIO

**Standard Oil Co. (Ohio)**

| | Gasoline Tank wagon | Service station | Incids tax of | Kero. Tank wagon |
|---|---|---|---|---|
| All Ohio points | 22.0 | 24.0 | 2.0 | 17.0 |

### CALIFORNIA CRUDE PRICES

***Standard Oil Co.-Union Oil Co.**
**(Effective March 11)**

| Gravity— | Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans-Dom'guez Torrance-Inglewood | Whittier La Habra Montebello | Kern River Newhall McKittrick Midway-Sunset Elk Hills Lost Hills Belridge | Coyote | Santa Fe Springs | Coalinga | Wheeler Ridge | Santa Maria Ventura Salt Lake |
|---|---|---|---|---|---|---|---|---|
| 14° | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 |
| 15° | .87 | .85 | .75 | .85 | .... | .75 | .75 | .85 |
| 16° | .90 | .85 | .75 | .85 | .... | .75 | .75 | .85 |
| 17° | .94 | .85 | .75 | .85 | .... | .75 | .75 | .85 |
| 18° | .98 | .86 | .75 | .86 | .... | .75 | .75 | .85 |
| 19° | 1.04 | .87 | .75 | .87 | .... | .75 | .75 | .85 |
| 20° | 1.10 | .89 | .82 | .90 | .89 | .79 | .78 | .90 |
| 21° | 1.16 | .91 | .90 | .98 | .91 | .86 | .81 | .97 |
| 22° | 1.22 | .94 | 1.00 | 1.06 | .94 | .93 | .85 | 1.04 |
| 23° | 1.28 | .97 | 1.11 | 1.14 | .97 | 1.00 | .89 | 1.11 |
| 24° | 1.34 | 1.01 | 1.22 | 1.22 | 1.02 | 1.07 | .92 | 1.18 |
| 25° | 1.40 | 1.05 | 1.33 | 1.30 | 1.08 | 1.14 | .97 | 1.25 |
| 26° | 1.46 | 1.09 | 1.44 | 1.38 | 1.16 | 1.21 | 1.01 | 1.32 |
| 27° | 1.52 | 1.13 | 1.55 | 1.46 | 1.24 | 1.28 | 1.05 | 1.39 |
| 28° | 1.58 | 1.17 | 1.66 | 1.54 | 1.32 | 1.35 | .... | 1.46 |
| 29° | 1.64 | 1.21 | 1.77 | 1.62 | 1.40 | 1.42 | .... | 1.53 |
| 30° | 1.70 | 1.25 | 1.88 | 1.70 | 1.48 | 1.49 | .... | 1.60 |
| 31° | 1.76 | .... | 1.99 | .... | 1.60 | 1.56 | .... | 1.67 |
| 32° | 1.84 | .... | 2.10 | .... | 1.72 | 1.63 | .... | 1.73 |
| 33° | 1.92 | .... | 2.21 | .... | 1.84 | 1.70 | .... | 1.79 |
| 34° | 2.00 | .... | 2.32 | .... | 1.96 | 1.77 | .... | 1.85 |
| 35° | 2.08 | .... | .... | .... | 2.08 | 1.84 | .... | 1.92 |
| 36° | 2.16 | .... | .... | .... | 2.16 | .... | .... | .... |
| 37° | 2.24 | .... | .... | .... | 2.24 | .... | .... | .... |
| 38° | 2.34 | .... | .... | .... | 2.34 | .... | .... | .... |
| 39° | 2.44 | .... | .... | .... | 2.44 | .... | .... | .... |
| 40° | 2.54 | .... | .... | .... | .... | .... | .... | .... |
| 41° | 2.64 | .... | .... | .... | .... | .... | .... | .... |
| 42° | 2.74 | .... | .... | .... | .... | .... | .... | .... |

*Column 2—Long Beach and Huntington Beach crudes, 14 to 22 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 3—Whittier and La Habra crudes, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 9—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

### TANKWAGON PRICE CHANGES

September 21—Magnolia Petroleum Co. reduced kerosene 2 cents at Muskogee. California Petroleum Corp., Julian Oil Co., Gilmore Oil Co. and Richfield Oil Co. reduced gasoline prices 3 cents at Los Angeles meeting Union Oil Co. reduction of September 20, announced in the September 23 issue of The Oil and Gas Journal. The Richfield cut is effective throughout California.

September 24—Standard Oil Co. of California reduced gasoline prices 2 cents at Los Angeles. Pan American Petroleum Corp. and the Shell Co. cut gasoline 3 cents at Los Angeles, meeting Union Oil Co. reduction of September 20.

September 25—Union Oil Co. reduced gasoline prices another cent at Los Angeles.

September 27—Standard Oil Co. of California cut gasoline 1 cent at Los Angeles.

### CRUDE PRICE CHANGES

September 22—Humble Oil & Refining Co. posted a price of $1.25 for all crude bought in Hutchinson and Carson Counties, Texas Panhandle. This was a reduction of 10 to 90 cents. Crude bought in other counties of the Panhandle was unchanged. Magnolia met the Humble price but posted the price of $1.25 to include all fields in the Panhandle. This was an advance of 10 cents on crude below 34 gravity, no change on crude "34 to 34.9" but a reduction of 10 to 20 cents on other grades. Gulf Pipe Line Co. met the prices but Kay County Gas Co. prices were unchanged.

### ISAAC N. HARKLESS DEAD

OWENSBORO, Ky., Sept. 25—After an illness of about a year, Isaac N. Harkless, 49, manager of the Newton Oil Co., died at his home, 510 St. Ann Street, this city.

Mr. Harkless was one of the pioneer oil operators in the local field. He came to Owensboro a little over three years ago and drilled the second producing well in the field. Before entering the Owensboro Field, he was a pioneer in both the Scottsville and Bowling Green Fields. His brother was associated with him in development work. Up to a year ago he was quite active and brought in a number of good wells. As the result of an accident he was made incapable of active work, and lingered until death came. He was very popular among his fellow oil men and others who knew him.

The body was sent to his former home in Butler, Pa., for interment.

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# California Issues Feature Market

## Oil Securities Were Irregular During Past Week. Union Oil Co., Under Accumulation, Registers New High

By N. O. Fanning

*New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City*

NEW YORK, Sept. 27.—Oil securities were irregular during the past week. Union Oil Co. of California continued under accumulation and Producers & Refiners was strong.

Union Oil Co. stock was extremely active and registered a new high price of 58¾. Standard Oil of California, California Petroleum and Pan American Western were active and slightly higher.

Recently eastern refiners have placed large orders with California companies for gasoline and fuel oil, at prices, it is understood, giving the latter substantial profits, on material which might otherwise have remained in storage at this time.

In addition, the California companies have enjoyed a good seasonal business on the Pacific Coast, with the result that their position, statistically, is better than at any time since the great overproduction of 1923.

### Faith in Business

To some market students, the failure of oil securities as a whole to make more substantial gains since the bull market started in 1924, has brought suspicion that there is something intrinsically wrong about which the public as a whole is ignorant. On the contrary, the oil business has been steadily improving since 1924, and this year so far has made the best record in earnings, on the whole, since the boom year of 1920.

The great fear in the oil business, since 1923, has been that overoptimism might develop, with resulting excessive drilling and overproduction. In fact, each discovery well has caused some uneasiness in the breasts of leading oil men. Every new field discovered is certain to be a second Powell, or if in California another Santa Fe Springs, and this fear has served as a brake to optimism, which, no doubt, has been communicated to the financial markets.

If there is any misgiving now, so far as the oil situation is concerned, it is that a new field will be brought in before winter which will bring a repetition of 1923. The three areas which have caused some misgiving are the Panhandle, Nigger Creek and Seminole. Of these, Nigger Creek seems probably to have been eliminated as a menace. The Panhandle is now more or less of a known quantity. Seminole, however, has still to show its potentialities, and it is this field on which the eyes of the oil business are focused.

The failure to bring in any new big field aside from these, and a reasonable check on production generally through conservative drilling, plus a good fall demand for gasoline, would cause considerable improvement in the oil situation, it is believed. But even so, the crude oil purchasers are not anxious to bid up crude prices sensationally, for they feel conservatism would be certain to usher in one of the best years the oil industry will ever have had, in 1927.

Applying the same sort of reasoning to oil securities, and a probable explanation of their failure to score sensational advances as a group, is obtained.

### Tide Water Associated

An extension of the syndicate which underwrote the securities of the Tide Water Associated Oil Co. was announced September 20, on which date the syndicate was to have expired after an extension from August 4. In the case of the $46,000,000 preferred stock, which was offered some time ago, the time is extended 60 days, and in the case of the common stock, which has never been offered, the extension is for six months, or until March 20, 1927.

The underwriting syndicate was composed of Blair & Co., Chase Securities Co. and others. These participated in the organization of the selling syndicate, included in which are Brown Brothers & Co., Hayden, Stone & Co., Blyth, Witter & Co. and Mitchell, Hutchins & Co.

Members of the syndicate have been informed, it is understood, that negotiations for the sale of the common stock have been under way, but that no deal has been arranged. The syndicate was extended, it was said, because of these negotiations. Pan American Eastern Petroleum Co. was mentioned as negotiating for the stock.

### Pan American Western

Pan American Western Petroleum Co., headed by Edward L. Doheny, is benefiting from the heavy movement of California oil to the Atlantic Seaboard. About a month ago Pan American Eastern made arrangements to take large quantities from the Western corporation, to replace its usual purchases from Huasteca Petroleum, its Mexican subsidiary. This was said to be due to the fact that Pan American Western could supply fuel oil and gasoline at attractive prices. Sales by Pan American Western to the eastern organization are running at the rate of about 1,500,000 bbls. a month.

### Richfield Oil Financing

Bond & Goodwin, Tucker & Co., and Aranson & Co. are heading a banking syndicate to place on the market $10,000,000 bonds of the Richfield Oil Co. This company is absorbing practically all of the stock of the United Oil Co. and other California independents to form a $60,000,000 corporation.

The purpose of the financing is to provide for the retirement of the United Oil Co.'s first mortgage and collateral trust convertible bonds, for the acquisition of additional properties, and for other corporate purposes.

### Crown Central

Crown Central has purchased from the Rydal Oil Co. its half interest in 1,003 acres in the Mirando Field, Texas, with production of 800 bbls. daily, the other half already being owned by Crown Central.

### Pan American Dividends

The Pan American Petroleum & Transport Co. has declared the regular quarterly dividends of $1.50 a share on the common and Class B common stock, payable October 20 to stockholders of record September 30.

A special meeting of the Pan American Petroleum & Transport Co. stockholders has been called for November 1 to act on the plan for Pan American to acquire the minority interest in Lago Oil & Transport on the basis of three shares of Lago for one share of Pan American B stock.

### NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

| Stocks— | Par | Clos. Quot. Sept. 27 | Clos. Quot. Sept. 20 | 1926 High | 1926 Low | 1925 High | 1925 Low | 1924 High | 1924 Low |
|---|---|---|---|---|---|---|---|---|---|
| Amerada Corp. | .. | 31½ | 31⅜ | 32⅜ | 21¾ | .. | .. | .. | .. |
| Atlantic Ref., com. | 100 | 110⅛ | 110⅛ | 128⅜ | 97 | 117½ | 95⅛ | 140½ | 78½ |
| Barnsdall "A" | 25 | 26⅞ | 26⅝ | 33½ | 23½ | 33½ | 18⅝ | 29½ | 14 |
| California Pet., com. | 25 | 32 | 32½ | 38⅛ | 30⅝ | 34⅝ | 23⅞ | 29 | 19⅞ |
| Houston Oil | 100 | 59½ | 56 | 72 | 50½ | 85 | 59 | 82½ | 61 |
| Independent Oil & Gas | .. | 26 | 25⅝ | 34 | 20¼ | 41⅜ | 13½ | 16¼ | 5⅜ |
| Indian Refining | 10 | 9½ | 8½ | 13¾ | 9½ | 14⅛ | 5½ | 7 | 3⅝ |
| Lago Oil & Trans. | .. | 20⅞ | 20⅜ | 24½ | 19¼ | .. | .. | .. | .. |
| Louisiana Oil | 10 | 15½ | 15¼ | 19⅝ | 12 | 23⅜ | 13⅜ | .. | .. |
| Maracaibo | .. | 21⅜ | 21⅜ | 28⅞ | 20⅜ | 35½ | 20⅜ | 37¼ | 25⅜ |
| Marland | .. | 57 | 56½ | 63⅝ | 49¼ | 60⅛ | 32⅝ | 42 | 29 |
| Mexican Seaboard | .. | 10¼ | 10½ | 13⅜ | 6 | 22½ | 9 | 26⅜ | 14¼ |
| Mid-Continent Pet. | .. | 30⅝ | 31⅛ | 41 | 25⅝ | 38 | 25⅜ | 40¼ | 22⅝ |
| National Supply | 50 | 70¼ | 70 | 71 | 55½ | 71 | 54⅜ | 72⅛ | 54 |
| Oil Well Supply | 25 | *34 | *33½ | 36 | 30 | 38 | 33⅜ | .. | .. |
| Pan. Amer., B | 50 | 67⅛ | 66½ | 73⅜ | 56⅛ | 83⅞ | 59½ | 65 | 44½ |
| Pan. Amer., Western B | .. | 35½ | 35⅞ | 46 | 34 | 49⅜ | 37⅛ | .. | .. |
| Phillips Pet. | .. | 49⅜ | 49⅝ | 52⅜ | 42½ | 47⅛ | 36¼ | 52¼ | 28½ |
| Producers & Refiners | 50 | 16⅛ | 13½ | 17½ | 11 | 32⅝ | 12½ | 32½ | 29⅜ |
| Pure Oil, com. | .. | 26⅞ | 26⅛ | 31 | 25⅜ | 33¾ | 25⅛ | 30¼ | 20 |
| Royal Dutch, N. Y., sh. | 15.40 | 50 | 51⅜ | 57⅜ | 49⅜ | 57⅜ | 48¼ | 59½ | 40⅜ |
| Shell Transport | 10 | *44 | *43 | 48⅞ | 42 | 49 | 39⅜ | 42 | 33 |
| Shell Union, com. | .. | 28⅞ | 28⅞ | 36⅜ | 24 | 28⅜ | 21⅝ | 22½ | 15⅜ |
| Simms Pet. | 10 | 18½ | 18⅞ | 28⅝ | 16½ | 28½ | 17⅜ | 24 | 10⅝ |
| Sinclair Consolidated, com. | .. | 20½ | 20½ | 24⅞ | 19⅜ | 24⅞ | 17 | 17½ | 15 |
| Skelly Oil | 25 | 34½ | 33⅞ | 37⅛ | 27 | 32½ | 21⅜ | 29 | 17⅝ |
| Standard of California | 25 | 60⅜ | 60⅞ | 62½ | 54 | 67⅛ | 51½ | 68½ | 55½ |
| Standard of New Jersey, com. | 25 | 42⅞ | 42⅝ | 46⅝ | 40¼ | 47½ | 38⅜ | 41½ | 33 |
| Sun Oil Co. | .. | *34 | *34 | 41⅝ | 30⅛ | 43⅞ | 38⅛ | .. | .. |
| The Texas Company | 25 | 55⅞ | 54⅛ | 58 | 48 | 55 | 42⅜ | 45⅝ | 37⅝ |
| Texas Pacific Coal & Oil | 10 | 15⅛ | 15 | 19⅛ | 12⅛ | 23⅜ | 11 | 15⅛ | 8⅛ |
| Tide Water Oil | 25 | *31 | 30 | 39⅛ | 30⅛ | .. | .. | .. | .. |
| Transcontinental | .. | 4⅝ | 4⅝ | 5½ | 3 | 5⅝ | 3½ | 6½ | 3⅝ |
| Union Oil of California | 25 | 56⅛ | 51⅜ | 58⅜ | 37½ | 43⅜ | 33⅛ | 39 | 35½ |
| Union Tank, com. | 100 | 116 | 115¼ | 120 | 84½ | 134 | 118 | 132⅞ | 94 |
| White Eagle Oil & Refining | .. | 27 | 26½ | 29⅝ | 25⅛ | 31⅝ | 25⅝ | 29⅜ | 23⅛ |
| **Standard Oils** | | | | | | | | | |
| Anglo-American Oil | £1 | 18 | 18⅛ | 19⅜ | 16½ | 26⅜ | 17½ | 18⅜ | 14⅝ |
| Borne Scrymser | 100 | *275 | 295 | 295 | 226 | 240 | 205 | 164 | 150 |
| Buckeye Pipe Line | 50 | 46½ | 46½ | 59½ | 47⅝ | 72 | 63½ | 85½ | 51 |
| Chesebrough Mfg. Co. | 25 | 73½ | 73 | 72⅜ | 63 | 74 | 48½ | 62½ | 29¼ |
| Continental | 10 | 19⅝ | 20⅛ | 25⅞ | 19¼ | 31⅛ | 21⅜ | .. | .. |
| Crescent Pipe Line | 25 | *15½ | *15½ | 16 | 14½ | 17½ | 10 | 20 | 11⅜ |
| Cumberland Pipe Line | 100 | *106 | 109 | 137 | 108 | 156 | 128 | 148 | 108 |
| Eureka Pipe Line | 100 | 46½ | *48 | 63⅝ | 47⅜ | 96 | 61½ | 105 | 74 |
| Galena Signal, com. | 100 | 16⅛ | 17 | 32½ | 16⅛ | 68⅛ | 23½ | 69⅜ | 62½ |
| Humble Oil & Refining Co. | 25 | 57⅞ | 58⅛ | 68⅛ | 52 | 99 | 42½ | 43⅜ | 36 |
| Illinois Pipe Line | 100 | *134½ | 135½ | 144 | 181 | 154½ | 124 | 161 | 123 |
| Imperial Oil, Ltd. | .. | 36 | 36 | 38⅜ | 32½ | 39¼ | 27¼ | 119 | 99 |
| Indiana Pipe Line | 50 | *60½ | 60 | 68 | 58 | 84 | 87½ | 100 | 66 |
| International Pet. Co. | 10 | 32⅜ | 33 | 35¼ | 28⅜ | 25⅜ | 22⅛ | 34⅜ | 16⅞ |
| National Transit Co. | 12.50 | 13⅜ | *14 | 20⅜ | 14½ | 25½ | 16½ | 25⅞ | 20⅝ |
| New York Transit | 100 | *31⅛ | *31 | 51½ | 33¼ | 79 | 50 | 97 | 54½ |
| Northern Pipe Line | 100 | *67½ | *69 | 80½ | 68 | 88 | 67½ | 107½ | 72 |
| Ohio Oil Co. | 25 | 58⅝ | 58⅞ | 67⅜ | 55⅜ | 75½ | 60 | 79½ | 53 |
| Penn.-Mex. Fuel | 25 | *18⅛ | *18⅛ | 24¼ | 15 | 44 | 19 | 35⅝ | 27 |
| Prairie Oil & Gas | 25 | 51¼ | 51 | 68¼ | 48 | 65½ | 45⅞ | 269 | 193 |
| Prairie Pipe Line | 100 | 122¾ | *124 | 127 | 122½ | 129¾ | 107 | 111 | 100 |
| Solar Refining Co. | 100 | *206 | *203 | 212 | 184½ | 259 | 200 | 240 | 170 |
| South Penn Oil | 25 | 37½ | *37 | 50 | 35 | ‡197 | 138 | 176 | 117 |
| Southwest Pa. Line | 100 | *50½ | *51¼ | 56 | 47½ | 84 | 50 | 89 | 68 |
| Southern Pipe Line | 50 | *24½ | 24½ | 74½ | 61½ | 103 | 63 | 100 | 80½ |
| Standard of Indiana | 25 | 63⅜ | 63⅞ | 70½ | 61⅝ | 70⅜ | 59½ | 69⅝ | 54¼ |
| Standard of Kansas | 25 | *20 | *21 | 36½ | 21 | 46 | 30¼ | 50½ | 32½ |
| Standard of Kentucky | 25 | 121½ | 121 | 134⅝ | 108 | 137 | 114⅝ | 121⅞ | 101 |
| Standard of Nebraska | 25 | 46 | 46 | ‡51⅜ | ‡42 | 270 | 231 | 262 | 198 |
| Standard of New York | 25 | 31⅜ | 32⅛ | 47¼ | 30⅝ | 48⅝ | 40 | 48 | 37⅜ |
| Standard of Ohio, com. | 100 | *296 | 298 | 362 | 292½ | 369 | 338 | 337½ | 277 |
| Swan & Finch, com. | 25 | *17 | *17½ | 21 | 18 | 27 | 12 | 28 | 20 |
| Vacuum Oil | 25 | 98⅛ | 98¾ | 109⅜ | 84⅛ | 169½ | 86½ | 83½ | 50½ |
| **Miscellaneous** | | | | | | | | | |
| Gulf Oil Corp. of Pa. | 25 | 91½ | 89 | 95 | 82½ | 98¼ | 63½ | 67⅜ | 56 |
| Tidewater Associated | | 23⅛ | 23 | 27 | 21 | .. | .. | .. | .. |

*Bid, no sales. ‡Old stock. †New Stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sept. 27 | 58.78 | Aug. 23 | 59.06 | July 19 | 59.45 |
| Sept. 20 | 58.46 | Aug. 16 | 59.34 | July 12 | 59.43 |
| Sept. 13 | 59.06 | Aug. 9 | 59.35 | July 2 | 59.38 |
| Sept. 3 | 60.16 | Aug. 2 | 59.76 | June 28 | 60.17 |
| Aug. 30 | 59.86 | July 26 | 58.44 | June 21 | 59.91 |

## PENNSYLVANIA MARKET IS NOW VERY UNCERTAIN

OIL CITY, Pa., Sept. 25.—The gasoline situation in the Pennsylvania refining district is very uncertain. In the Oil City and Franklin area the refiners are in fine shape as to this product, while in Warren gasoline is softer. In Oil City and Franklin there is a fine wholesale demand for motor fuels and no weakness, while in Warren there is a shading off. Consumption continues much better than at this time last year, but is falling. One reason given is the opening of the schools and colleges.

Kerosene is a little softer, and demand is down a little. Fuel oil is stronger and in good demand. Wax is a bit softer, and the prices are being shaded ⅛ cent. The demand for neutrals continues good. If it were possible for the cylinder stock market to be any weaker than a week ago, then it is. Bright and filtered stocks are in good demand.

## NIGGER CREEK OUTPUT CONTINUES DECLINE

MEXIA, Tex., Sept. 27.—The Nigger Creek Pool excitement in Limestone County is almost a thing of the past. It is three weeks since any additional wells have been announced, and the past week offered the completion of three wells, which not only failed to bolster up the production, but registered a decrease. On Sunday of this week, the pool produced 10,429 bbls. from a total of 43 wells. All three wells were inside locations, and their small production continued to dim the ardor of the operators for the pool.

It is now estimated that the Nigger Creek Pool is producing 40 per cent water and b.s., and when this percentage is deducted from the daily yield, it leaves only a small figure.

There is no news of importance from the rest of the territory, and until some new developments occur along the fault line, the usual lull will prevail.

## OPENS CHICAGO OFFICE

CHICAGO, Sept. 25.—The New Orleans Refining Co. has opened offices in this city for the sale of its heavier products including flux, road, fuel oils and the like. The offices, located at 317 Chamber of Commerce Building, are under the management of C. F. Deerman.

## LOUISIANA-ARKANSAS

(Continued from Page 82)

No. 4 Baetty Hall, 330 feet south and west NE cor. Section 31-15-19.

**Columbia County**

On the Columbia side of the Stephens Field Gorden and associates' No. 8 Jones, Section 36-15-20, was completed in sand at 2,230-33 feet for a 15-bbl. pumper. A derrick pattern is on location for Gulf Refining Co.'s No. 1 Huggins, 1,020 feet east and 300 feet north, SW cor. Section 31-17-22.

**Nevada County**

Southern Crude Oil Purchasing Co.'s No. 1 Water, Section 2-14-21, in the Nevada Field, was good for 100 bbls. on the pump from sand at 1,183-89 feet. Humble Oil & Refining Co.'s No. 4 Bodcau, Section 10-14-21, is drilling at 2,920 feet; No. 2-B Groves, Section 1-14-21, is waiting for a standard rig at 1,136 feet, and a rig is being moved in for No. 2-C Groves, Section 1-14-21.

**LOUISIANA**

**Bossier Parish**

Two small pumpers in the Bellevue Field and a small gas well in Elm Grove summarized the Bossier Parish completion report. Autrey Oil Co.'s No. 4 Connell, Section 15-19-11, was put on the pump at 381 feet and is good for 35 bbls. daily. Same company's No. 5 Connell, Section 15-19-11, formerly reported as abandoned at 467 feet, was put on the pump at that depth and is making 10 bbls. In Elm Grove Palmer Corp.'s No. 1 Hunter, Section 13-16-12, is making 800,000 feet of gas at 1,946 feet.

George W. Wetherbee's No. 14-A fee, Section 15-19-11, is drilling in rock at 420 feet. Wetherbee's No. 13-F fee, Section 23-19-11, is shut down at 396 feet.

**Caddo Parish**

Three oil wells and a failure were recorded in Caddo. Dixie Oil Co.'s No. 79 Robertshaw, Section 14-21-15, is making 20 bbls. on the pump from the chalk rock at 1,645 feet. Gulf company's No. 249 Ferry Lake, Section 16-20-16, is a 42-bbl. pumper at 2,287 feet. Gulf company abandoned location for No. 8-U Levee Board, Section 16-20-16, and will not drill. The Texas Company's No. 64 Caddo Levee Board, Section 33-21-16, is pumping 50 bbls. from 1,824 feet. Unity Petroleum Co.'s No. 2 Carepen fee, Section 24-21-16, was abandoned in salt water sand at 1,950 feet.

Bayou State Oil Co.'s No. 23 Peak, 700 feet north and 250 feet west SE NE, Section 23-22-15, is a derrick. Dixie Oil Co.'s No. 18 Muslow, Section 18-20-15, is drilling lime at 1,400 feet and No. 10 Slattery, Section 27-21-15, is drilling broken lime at 2,500 feet. On the Gulf Refining Co.'s Ferry Lake lease, half a dozen tests are in operation. No. 252 is drilling at 990 feet; No. 253 is waiting for cement to set at 2,145 feet; No. 254 is boring through chalk rock at 1,611 feet; No. 255 is drilling shale and boulders at 2,112 feet; No. 256 is drilling at 835 feet and No. 257 is waiting for 6-inch to set at 2,150 feet. Lewis Oil Corp.'s No. 8 Vespy, Section 15-21-15, is waiting for casing to set at 1,440 feet. Magnolia company's No. 1 Wemple, Section 14-20-15, is being rigged. Murphy and associates' No. 1 Youree, Section 13-20-15, is drilling at 1,250 feet. A derrick is up for Morris Drilling Co.'s No. 2 Pala Oil Co. fee, 1,045 feet east and 395 feet north center Section 1-20-16. Ohio Oil Co.'s No. 3 Murray, Section 28-21-15, is a derrick. Ohio Oil Co.'s No. 22 E. K. Smith, Section 7-21-14, is drilling at 114 feet.

**Leading Deep Tests**

Magnolia company is leading in the deep tests in Caddo. No. 16 Dillon, Section 24-21-15, is waiting at 3,578 feet for a 3-inch drill stem. No. 17 Dillon is drilling the plug at 3,588 feet. The drill stem is being fished out at No. 1 Spell, Section 29-21-15, which is down 3,552 feet. No. 1 Wiley Bradford, Section 24-21-15, is drilling lime at 3,890 feet. Dixie Oil Co.'s No. 1 Jolly, Section 27-22-15, is drilling red shale at 4,348 feet. Gulf company's No. 1 J. M. Byrd, Section 2-19-14, is drilling hard blue shale at 3,890 feet. The Texas Company reset 4½-inch without cement at 3,751 feet and is drilling at 3,762 feet at No. 42 C. M. L. Co., Section 23-21-15.

Owl Oil Co. has staked location for No. 1 Wilburn, 660 feet north and 660 feet east SW cor. SE, Section 4-17-16. Richardson Oil Co.'s No. 3 Louisiana Oil Co. fee, Section 31-21-15, is drilling at 1,350 feet. Superior Oil Co.'s No. 5 Youree, Section 26-20-15, is drilling at 1,400 feet. The Texas Company has six operations in Caddo. No. 65 Caddo Levee Board, NE cor SE, Section 33-21-16, is a location; No. 1-B Caddo Levee Board, Section 22-15-12, is drilling sandy shale at 961 feet; No. 40 C. M. L. Co., Section 23-21-15, is being reamed to 2,319 feet where a packer is to be set; No. 1 Curtis, Section 14-20-15, has spudded; No. 3 Perry, Section 3-20-16, had a show of oil and gas at 2,263 feet and is drilling in sandy shale at 2,272 feet, and No. 12 Russell, Section 3-20-16, is drilling at 2,258 feet.

Thomason and associates' No. 2 Muslow fee, Section 31-21-15, offset to No. 1, a 1,000-bbl. chalk rock well, is waiting for a standard rig at 1,545 feet; No. 3 is being rigged. Unity Petroleum Co.'s No. 3 Crystal fee, Section 13-21-16, is waiting for a standard rig at 1,055 feet; No. 4, in Section 24-21-16, is drilling at 400 feet, and No. 5 is being rigged. Surface casing was set at 113 feet at Van Cleve and associates' No. 1 Edson, 1,720 feet south and 200 feet east NW cor. Section 32-21-15. The lease was formerly reported as Brown and associates. Victor Wenzell's No. 2 Hunsicker, Section 15-20-15, is drilling at 1,200 feet, and a derrick pattern is on location for No. 3. A rig is being moved in for Wenzell's No 2 Wemple, Section 14-20-15.

**LaSalle Parish**

Urania hurdled over its routine character of completions last week and bid for recognition with a 1,000-bbl. well in the northern end of the field. It was Hunt, McCurry and Zoder's No. 3 Winnberry, CSL SW SE, Section 7-10-2e, and came in flowing 1,000 bbls., 5 per cent water, from sand at 1,513-18 feet. The well is a west offset to the extension well drilled several months ago by the same operators. The extension well was good for around 350 bbls. Close to Tullos Natural Gas & Fuel Corp.'s No. 4 Frank Tullos, Section 26-10-1e, is flowing 100 bbls. of clean oil from sand at 1,497-1,501 feet. C. S. Thomas' No. 1 Urania, Section 18-10-2e, is making 50 bbls. naturally from sand at 1,527-30 feet.

Carter and Hurley's No. 1-C Urania, Section 3-9-1e, is a derrick. Catalina Oil Co.'s semi-wildcat, Section 8-10-2e, topped the sand at 1,525 feet and 6-inch casing was cemented at 1,518 feet. A derrick is up for the same operators' No. 2 Urania, 690 feet east and 125 feet north SE cor. SW NW. Chal Daniel's No. 1 Urania, Section 2-9-1e, topped sand at 1,486 feet and while lowering, the 6-inch casing stuck at 1,300 feet. Six-inch casing was cemented at 1,502 feet at Hardtner Oil Co.'s No. 1 Urania, Section 7-10-2e. Keene and Woolf Oil Co.'s No. 3 Griswold, Section 3-9-1e, is drilling at 960 feet. Louisiana Oil Refining Corp.'s No. 6-C Tremont, Section 3-9-1e, is a derrick.

Montague Oil Co.'s No. 3 Zenoria, Section 11-9-1e, is drilling at 1,300 feet. McGahan and associates' No. 1 Urania, Section 5-10-2e, is drilling at 1,450 feet. Natural Gas & Fuel Corp.'s No. 5-A Russell, Section 26-10-1e, was dry in sand at 1,546-48 feet and is to be drilled deeper; No. 6-A Russell is waiting for 6-inch casing to set at 1,540 feet. Natural Gas Co.'s No. 5 F. Tullos, 420 feet west and 540 feet north SE NW SE, Section 26-10-1e, is a derrick pattern, and location was staked for No. 6 F. Tullos, 370 feet west and 95 feet north SE cor. NW SE. Same company's No. 5-M Urania, Section 20-10-2e, which blew in making 15,000,000 feet of gas and spraying oil from 1,580-88 feet, sanded up when the drill stem was pulled; No. 6-M is waiting for casing to set at 1,558 feet; location was staked for No. 7-M Urania, 300 feet north and east SW cor. NW SW, and for No. 8-M Urania, 300 feet south and east NW cor. NE SW, both in Section 20-10-2e.

Oil Operators Trust's No. 6 Urania, 400 feet south and 150 feet north NW SE SE, Section 7-10-2e, is a rig. Six-inch casing was cemented at 1,506 feet at Pima Oil Co.'s No. 9-B Urania, Section 7-10-2e. Shreveport Oil Corp.'s No. 1 Morrow, Section 26-10-1e, is a derrick. Shreveport corporation's No. 2 Pendarvis, 510 feet east and 95 feet north, SW cor. SW SE, Section 26-10-1e, is a rig. Six-inch casing was cemented at 1,550 feet at Taylor's, trustee, No. 5 Urania, Section 19-10-2e. George Wetherbee's No. 5 Urania, Section 2-9-1e, had sand at 1,500-02 feet and is waiting for a standard rig; No. 1-B, in Section 3-9-1e, is waiting for cement to set at 1,473 feet, and No. 2-B, drilling at 650 feet. On the Winn Parish side of the field, Allen and associates' No. 2 Allen, Section 23-10-1e, is waiting for casing to set at 1,497 feet. Six-inch casing was cemented at 1,490 feet at O. W. Clark's No. 9 Harper, Section 23-10-1e; No. 10 tested salt water with a show of oil at 1,228-30 feet and is to be deepened. Natural Gas Corp.'s No. 1-F Urania, Section 23-10-1e, drilling at 400 feet. F. A. Shannon's No. 1 Albritton, Section 27-10-1e, is being rigged.

**Monroe District**

The single completion in the Monroe district last week was R. W. Rhodes' failure, No. 1 Pickens, Section 22-22-2w, which was dry and abandoned at 2,500 feet. Natural Gas Products Co.'s No. 8 Tensas Delta, Section 33-22-4e, is drilling at 1,600 feet. Operations are being delayed at Standard's No. 1 Cooperage, Section 34-21-3e, by a fishing job at 1,137 feet. Six-inch casing was cemented at 2,160 feet at United Carbon Co.'s No. 1 Clarke, Section 26-20-5e. Central company's No. 2 Kerr, Section 12-19-4e, is drilling at 1,810 feet. Ten-inch casing was cemented at 780 feet at Gulf company's No. 1 West Virginia, Section 17-17-5e. The plug at 2,130 feet is being drilled at Hatcher and Evans' No. 3 fee, Section 17-19-4e. Six-inch casing was cemented at 2,120 feet at Ladell and associates' No. 34 fee, Section 6-19-5e. The plug at 2,138 feet is being drilled at Maurey Drilling Co.'s No. 4 McErwin, Section 20-19-4e.

Ouachita Natural Gas & Oil Co.'s No. 2 D'Arbone, Section 25-19-2e, is being cored at 2,280 feet; No. 7 Allison, Section 37-21-4e, is drilling at 1,570 feet. The plug at 2,131 feet is being drilled at Palmer corporation's No. 1 Lynch, Section 18-19-5e. Ten-inch casing was cemented at 260 feet at Gulf company's No. 1 Nelson, Section 5-19-1e, and the test is drilling in brown sandy shale at 1,155 feet.

**Webster Parish**

Humble Oil & Refining Co.'s No. 3 Tiner, Section 21-21-10, in Cotton Valley, had sand at 2,551-59 feet and was good for 135 bbls. when put on the pump. Palmer corporation's wildcat test, No. 1 Crichton, Section 30-20-8, was dry and abandoned at 2,505 feet. Six and five-eighths-inch casing was cemented at 4,260 feet at Humble company's No. 2 Cox, Section 22-21-10. I. J. Laborde's No. 1 Bruner, 1,170 feet west and 150 feet south NE cor. Section 30-19-10, is shut down at 278 feet for rig repairs. Magnolia company's No. 1 Lewis, Section 25-23-10, is drilling at 1,430 feet. Location was made for Magnolia company's No. 4 Tiner, 990 feet north and west center Section 21-21-10; No. 3-A Turner, Section 21-21-10, is drilling at 2,300 feet, and location was staked for No. 4-B Turner, 990 feet north and east SW cor. NW. Five and three-sixteenths-inch casing was cemented at 4,246 feet at R. W. Norton's No. 1 Josey and Massey, Section 27-21-10. Ohio Oil Co.'s No. 4 Bank of Cotton Valley, Section 22-21-10, is drilling in lime at 1,396 feet. Smitherman and McDonald's No. 1 Oakley, Section 29-23-11, is drilling in lime and shale at 4,801 feet.

## DISCUSS GEOLOGY OF IMPORTANT OIL RESERVES

(Continued from Page 28)

finding that the river bed itself became the axis of a well-defined structure. Further, in support of this theory, Doctor Harrison found sinks far back from the river canyon, indicating that the salt moving out from under the heavy overload of rock, had left spaces where the arch of the native rock was not able to sustain its weight and fell in.

Moreover, he considers the strata underlying the salt as well worth the attention of the wildcatter. While this may be productive of black oil, this class of production is sure to be found valuable in the future and is even now being developed in several fields by the oil companies. At Grass Creek Field in the Big Horn Basin of Wyoming, the black oil sands are expected to yield more oil than the upper sands which made that field famous and produce only a high-grade crude.

Doctor Harrison's paper created considerable discussion, especially in regard to his theory of the erosion of the river tending to create domes by the lifting of the overburden.

**Closed Structures**

R. C. Coffin took for his subject, the partiality of geologists for "closed structures." When in the early days of the development in the Rocky Mountain region, prospective domes were rather plentiful, the geologist was able to eliminate questionable areas by taking cognizance of closed structures only. An analyses of the results, however, does not exclude the so-called open structures. The geologist in the Rocky Mountain region has located and drilled 268 wildcat structures which were supposed to be closed and of these 39 have been found productive of oil and 35 were gas producing areas. The geologist has been right in only 29 per cent of the tests, 15 per cent oil and 13.8 per cent gas. According to Mr. Coffin, the average has been raised 5 per cent in the past four years.

He advised a closer study of the region and the testing of many of the open structures that have been passed over by geologists in the past years.

**Discusses Salt Domes**

H. W. C. Promell followed Mr. Coffin with a paper on The Salt Domes of Permian Age and Their Influence on Oil Production. Mr. Promell was assisted in the preparation of this paper by H. E. Crum.

This paper dealt with the salt domes of the Colorado River country and Mr. Promell differed in his theory of the origin of the salt dome from that of Harrison and Coffin. This paper discussed the whole Colorado River district and its relation to the oil man and was accompanied by a large amount of detailed work on charts and maps to give a better insight to the points involved.

Mr. Promell's conclusion was that this region contained many structures that would be found oil-bearing and advocated a close examination and many tests.

**Shearing Planes**

The next paper on the program was one by Dr. Bailey Willis of Los Angeles, but as this scientist was unable to be present at the meeting, his son, Robert Willis, read the paper.

Doctor Willis' paper dealt with shearing stresses as related to the formation of structures both in California and the Rocky Mountain region. The California oil structure is caused by shearing planes, the Rocky Mountain structures are usually formed by upthrust or overthrow and the Applachian structure by folding.

It has been found by Doctor Willis that the shearing takes place at an angle of 45 degrees to the lines of pressure or lines of force. This was represented by charts accompanying the paper.

The great San Andreas Fault was shown charted and its effect on the California Coast noted in the discourse. It was further shown that measurements taken since 1906 show movements of the earth to be as much as 24 feet in some instances and that the whole coast line from San Francisco southward is affected by this movement.

In answering some questions regarding the danger of earthquakes in California, Robert Willis stated that his father had computed the next great earthquake to take place in California within the next eight years and the last serious earth-

quake in the Los Angeles region was in 1858, where this coming earthquake is expected.

C. A. Fisher and D. Russell Lloyd completed the program and the convention with an excellent paper titled The Northern Cordilleran Geosyncline and Its Relation to Petroleum Accumulations.

This paper proved to be a highly technical thesis on the early geologic history of the North American Continent, the deposition of the sedimentary strata and the part the great inland seas played in the construction of the continent. The conclusions drawn were that Canada appears to be a great area in reserve for the oil operator and that the lower horizons that are considered non-oil bearing in the United States may be found productive in the northern Canadian country where these rocks are known to show petroliferous deposits.

A resolution was presented by the committee appointed, extending the thanks of the geologists to the many people and interests who had made the convention a success. The meeting then adjourned.

## SEMINOLE IS BIGGEST THING IN SIGHT

(Continued from Page 27)

Oil Co. tapped the Hunton lime in their No. 1 Dyer, NW cor. SE, Section 24-9-6. This find gave the pool its impetus, and wells were drilled to the Hunton formation with varied success. If deeper drilling had not been pursued, it is unlikely that the pool would ever have reached the prominent stage that characterizes it today.

In the spring the Independent Oil & Gas Co. consummated a deal with R. F. Garland whereby a well was drilled in the SW cor. NE, Section 26-9-6. This well was No. 1 Fixico, and after a showing in the Hunton lime, it was decided to drill it to the deeper strata. The Wilcox sand was picked up at a depth of 4,166 feet, and after drilling to a depth of 4,172 feet the well began flowing 6,000 bbls. daily. With a very limited amount of gas, the well increased its flow to 7,700 bbls., and then to 8,100 bbls., and since that time it has maintained a very uniform rate of production around 7,700 bbls.

Including the wells producing from the Hunton lime and the Wilcox sand in Townships 10-6 and 9-6, the Seminole Pool passed a figure of 30,000 bbls. daily on Monday of this week.

After the completion of the Independent-Garland well, there naturally were numerous wells started in the immediate region. The next well to tap the prolific Wilcox sand was the Gypsy Oil Co.'s No. 1 Carter, SE cor. NE NW, Section 24-9-6. This well was a mile and three-quarters northeast of the Independent-Garland well, and the finding of the Wilcox sand in this test accelerated drilling between it and the original Wilcox well.

The third well to touch the Wilcox was the Amerada Petroleum Corp. and the Gardner Petroleum Co.'s No. 1 Killingsworth, SE cor. SW NE, Section 23-9-6. When this well was found productive, it formed a triangle of Wilcox sand wells, and the rush to drill was on in earnest.

Efforts have been intensified by the finding of production in two wells since that time, and at present there are five wells producing from the Wilcox sand in that area. On Monday of this week, the five wells made a total production of 22,189 bbls.

### 157 Wells Drilling

There are 157 wells drilling to the Wilcox sand in the southeast of Township 9-6. It is estimated that a minimum cost of $60,000 per well will be necessary to complete a well in this section, and that means that a total expenditure of $9,420,000 will be necessary to complete the wells now under way.

It is mentioned that this amount will be necessary IF all the wells drilling are completed; for there is the very well-founded belief that many of the rigs now standing will be torn down and only a scar left to indicate the spot that once marked their hopes.

Considering the pool at large, it is only reasonable to believe that it will attain a peak production of well over 100,000 bbls., and it is equally reasonable to believe that the area of the pool will be delimited before the wells now drilling shall reach the sand.

The reason for the former opinion is that 60 wells are now drilling below the 3,000-foot level, and these wells should have an average production of better than 1,500 bbls. Added to the present production of the pool, this would place Seminole among the country's largest pools in history.

Wilcox sand pools generally do not cover a large area, and Seminole, while a wonderful pool, will not be exceptionally extensive. The greatest and largest Wilcox sand pool in Oklahoma was the Tonkawa deep sand development, which covered an area of 1,280 acres approximately. Barring corrections which were made subsequent to the completion of the first wells in Tonkawa, the pool was located in a region where uniformity of strata was noticeable. There was a regularity of both surface and subsurface formations in the Tonkawa Field which is entirely lacking at Seminole.

### Country Noticeably Faulted

Since the surface rocks and foldings at Seminole are very irregular and noticeably faulted, the theory that the subsurface is also faulted is tenable, and recent drilling has uncovered some verification of this theory. One-quarter mile northeast of the Independent-Garland well, the Gypsy Oil Co.'s No. 2 Fixico, SE cor NW NE, Section 26-9-6, has found the Hunton lime (regular depth 3,900 feet) 106 feet low on the structure. This well is almost on the line of a fault which has been mapped by the geologists of the Indian Territory Illuminating Oil Co., and according to geological opinion the Hunton lime may be completely eroded on this spot, and the Gypsy well may be an excellent producer in the Wilcox sand.

Another interesting feature of the pool is that in the Independent Oil & Gas Co. and R. F. Garland's No. 2 Fixico, one location east of No. 1 Fixico, the Wilcox sand was found 35 feet low, but the well is producing better than 4,400 bbls. daily, with absolutely no trace of water. This happening emphasizes that sand conditions are equally as important as structural conditions, and indicates that the Seminole Pool may follow the Wewoka deep sand pool, where many of the best well in the field were found on locations where the sand was touched at a depth which was believed to be below the water level.

### Rich in Gasoline

The Independent-Garland wells have acted similarly. They have both drilled themselves in, and have had a very limited gas pressure to assist in this process. A remarkable feature of this lease is that the natural gas from the first well has been utilized in a portable gasoline plant, and has made 11,000 gallons of grade Double A natural gasoline which has been marketed for 10½ cents per gollon, adding a revenue of over $1,000 per day to the recovery of the lease.

In the Seminole Pool, the usual occurrence of the discoverer merely locating the sand and leaving the best wells to those companies entering the field at a later date has been reversed. It is highly improbable that any company will profit to a greater extent than the Independent Oil & Gas Co. and R. F. Garland, and considering the rich yield of the two wells which have been drilled in, it would seem that the greater portion of their lease will be productive. The drilling of the first well on the lease required 120 days, and the second well was completed 56 days after drilling was started, and two other wells are within 150 feet of the sand. From these observations it will be noted that diligent and efficient operation has marked the Independent-Garland drilling. A time of 56 days for completing wells to a depth of 4,100 feet is a very good operating performance.

There has been a water shortage in the Seminole Pool, and a few companies have laid water pipelines to the branch of the Canadian River, 5 miles away. On some of the leases water wells have been drilled to a depth of 220 feet, and an abundant supply of fresh water obtained from that depth. On the Independent-Garland lease 11 water wells have been drilled and equipped at a cost of $1,500 each.

### $60,000 Per Well

The cost of drilling Wilcox wells in the Seminole Pool is estimated at $60,000, divided as follows:

| | | |
|---|---|---|
| Casing cost: | | |
| 100 feet of 15½-inch at $4.08 per foot | $ 408 | |
| 3,650 feet of 8¼-inch at $1.96 | 7,154 | |
| 4,050 feet of 6⅝-inch at $1.40 per foot | 5,670 | |
| Total casing cost | | $13,232 |
| Cost of rig | | 3,000 |
| Cost of rig construction | | 650 |
| Cost of cementing 8⅝-inch pipe | | 600 |
| Rotary drilling contract, 3,650 feet at $6.50 per foot | | 23,725 |
| Cable tool drilling contract the last 450 feet, at $5.50 per foot | | 2,475 |
| Supervision, water and fuel costs, flow lines, tankage and miscellaneous | | 16,318 |
| Total cost of completed Wilcox wells | | $60,000 |

## CRACKED GASOLINE FUTURE MOTOR FUEL

(Continued from Page 26)

Laboratory, with summarized results as shown in the following table:

| Key No. | Gravity Baume° | Initial Boiling Temp | 20% Temp °F | 50% Temp °F | 90% Temp °F | Dry Temp °F | Benzol Equivalent: K.C. Testing Lab. Method to produce Standard Knock |
|---|---|---|---|---|---|---|---|
| 1 | 65.3 | 80 | 170 | 246 | 366 | 400 | 0 |
| 2 | 49.7 | 93 | 173 | 196 | 335 | 396 | 40 |
| 3 | 57.7 | 81 | 210 | 292 | 392 | 433 | 5 |
| 4 | 51.3 | 80 | 206 | 320 | 412 | 430 | 50 |
| 5 | 54.9 | 93 | 205 | 293 | 398 | 435 | 25 |
| 6 | 53.0 | 95 | 216 | 294 | 374 | 451 | 20 |
| 7 | 59.2 | 96 | 197 | 258 | 362 | 431 | 25 |
| 8 | 55.4 | 87 | 188 | 292 | 388 | 430 | 40 |
| 9 | 40.4 | 121 | 258 | 343 | 317 | 450 | 66 |
| 10 | 54.2 | 82 | 208 | 306 | 406 | 436 | 24 |
| 11 | 43.2 | 125 | 204 | 271 | 381 | 430 | 60 |
| 12 | 54.7 | 93 | 208 | 269 | 375 | 443 | 40 |
| 13 | 53.2 | 92 | 204 | 275 | 396 | 430 | 25 |
| 14 | 56.4 | 90 | 204 | 254 | 348 | 412 | 25 |
| 15 | 51.6 | 98 | 216 | 318 | 405 | 438 | 30 |
| 16 | 47.8 | 110 | 161 | 188 | 252 | 348 | 130 |
| 17 | 57.2 | 100 | 222 | 302 | 388 | 426 | 10 |
| 18 | 57.2 | 94 | 214 | 274 | 310 | 338 | 45 |

### Key to Table

The key to the numbers in this table are as follows:

(1) Straightrun gasoline made from crude oil from Russell, Kans., this being a limited paraffin base oil field of uniform quality throughout.

(2) The standard 40 per cent benzol mixture with the Russell gasoline.

(3) Straight Red Crown gasoline to which no Tetra ethyl Lead has been added and as sold by the Standard Oil Co., in Kansas City, Mo.

(4) A gasoline made by the cracking of Smackover, Ark., heavy crude petroleum at the plant of Simms Petroleum Co., at Dallas, Tex., using the Cross Cracking Process exclusively.

(5) Gasoline made by the cracking of Smackover heavy crude petroleum at the plant of the Root Refineries Co., El Dorado, Ark., as made by the Dubbs Cracking Process and as sold by a jobber in Kansas City, Mo.

(6) Gasoline made by cracking Smackover heavy petroleum at the plant of the Lion Oil & Refining Co., at El Dorado, Ark., using the Burton Process, and as sold by a retailer in Kansas City, Mo.

(7) Gasoline sold by the Gulf Refining Co., at a filling station in Washington, D. C., under the name "No-Nox."

(8) Gasoline sold by the Sinclair Refining Co., in Kansas City, Mo., under the name "H C."

(9) Gasoline experimentally made by cracking kerosene at 1,000 pounds pressure and 950 degrees Fahrenheit temperature.

(10) Gasoline made by cracking North Texas Petroleum, using the Cross Process under normal operation.

(11) Gasoline made from California kerosene by vaporphase, low-pressure cracking by the "Pyro" Process.

(12) A vaporphase gasoline made by the Ramage Process at Toledo, Ohio, under the name "Cyclo."

(13) Gasoline made by the natural distillation of Mitchell County, Texas, crude oil.

(14) Gasoline made by the natural distillation of Southern California crude oil.

(15) Gasoline made by cracking Southern California petroleum using the Cross Process.

(16) A blending material obtained as a by-product in the manufacture of Blaugas at Omaha, Neb.

(17) Gasoline made by the normal cracking of Southern Kansas crude petroleum, using the Dubbs Process.

(18) Gasoline made by the cracking of Russian kerosene at the plant of the Medway Oil and Storage Co., England, using the Cross Process.

All of the above gasolines represent exclusively commercial products, with the exception of Nos. 9 and 16. (Note: These products were obtained in most cases from local dealers and representatives:)

## TEXAS PANHANDLE

(Continued from Page 35)

Block 22; No. 1 J. M. Shelton, drilling 1,118 feet, Capitol Land Tract. Breck Walker's No. 1 Stone, location, Section 35, I-T-O.

### Hemphill County

Andrade and others' No. 1 Humbolt, location, Section 44, Block 1. Dorning and others' No. 1 Alexander, spudded and shut down, Poitevent Survey. Hoover's No. 1 Hoover, drilling 1,700 feet, J. S. Hood Survey. Hoover and others' No. 1 Schaller estate, spudded and shut down, Section 4; No. 1 fee, fishing 510 feet, J. S. Hood Survey. McCorkle's No. 1 Shaller estate, rig on ground, J. Fanning Survey. Mitchell and others' No. 1 George, drilling 900 feet, Section 40, Block A-2.

### Hockley County

Ricker & Dodson's No. 1 Ellwood, drilling, SW cor. Section 55, Block A, R. M. Thompson Survey.

### Hutchinson County

Big Creek Oil Co.'s No. 1 Cal Merchant, straightreaming 6-inch 2,585 feet. Get Oil Co.'s No. 1 W. P. Allen, spudded and shut down. Gibson Oil Co.'s No. 1 McCormick, shut down at 3,166 feet, Section 18, Block M-23. Inspiration Oil Co.'s No. 1 Earl Thompson, plugging to abandon at 3,250 feet Lee Flowers' No. 1 Carver, fishing 1,200 feet. Panfield Oil Co.'s No. 1 Luginbyhl Brothers, drilling 760 feet, Section 50, Block M 23. Roxana Petroleum Corp.'s No. 1 H. Jasper, shot twice made 2 bbls. a day, total depth 2,900 feet. Sinclair Oil & Gas Co.'s No. 1 Williams, fishing 2,385 feet, Section 43, Block 47. Sunrise Oil Co.'s No. 1 William Lydl, show oil 2,739-59 feet, Section 33, Block Z. Western Development Co.'s No. 1 O. W. Jarvis, fishing tools 3,050 feet.

### Lamb County

E. C. Marrs and others' No. 1 Yellowhouse, drilling 1,700 feet.

### Lipscomb County

Everett and others' No. 1 Mrs. H. D. May, rig on ground; No. 1 Baxter ranch, rig and tools, Section 612, Block 43, McCorkle and others' No. 1 H. O. Peery, location abandoned; No. 1 Cook, location, Section 899, Block 43; No. 1 Hampshire, rig building, Section 733, Block 43. Snyder and others' No. 1 A. Barton, fishing 2,600 feet, Section 504, Block 43.

### Moore County

Amarillo Oil Co.'s No. 1 Masterson-J. drilling 1,270 feet, Section 59, Block O-18; No. 2 Terry Tompson, shut down at 1,470 feet, Section 19, Block 44. Cadman and others' No. 1 J. T. Sneed, Jr., underreaming 1,900 feet, Section 68, Block 3. Douglas Oil Co's No. 1 Beauchamp, fishing 280 feet, Section 112,

Block 44. Flowers' No. 1 Sneed running 8-inch at 2,010 feet. Section 25, Block 1. Humble Oil & Refining Co.'s No. 1 Kilgore, drilling 925 feet, Section 28, Block 44. Masters Oil Co.'s No. 1 J. T. Sneed, Jr., drilling 345 feet, Section 58, Block 6-T. Moore County Oil Co.'s No. 1 J. T. Sneed, Jr., fishing 1,000 feet, Section 30, Block 6-T Morton & Co.'s No. 1-H Rubert, drilling 590 feet, Section 191, Block 3-T. Phillips Petroleum Co.'s No. 1 Sneed, shut down at 3,040 feet, N. Jones Survey. Prairie Oil & Gas Co.'s No. 2 J. T. Sneed, Jr., drilling 2,670 feet, Section 26, Block 6 T. Shadler Brothers' No. 1 John Lowrey, rig, Section 237, Block 44. Shamrock Petroleum Corp.'s No. 1 C. E. Gober, drilling 480 feet, Section 16, Block M-1.

**Ochiltree County**

W. G. Burton's No. 1 Stickler, drilling 2,600 feet, Section 579, Block 43. Hamilton and others' No. 1 R. E. Wamble, shut down at 250 feet, Section 144, Block 43. McCorkle Pipe Line Co.'s No. 1 R. H. Moore, drilling 1,580 feet, Section 471, Block 43. Standard Development Co.'s No. 1 Bowden, shut down at 900 feet, Section 923, Block 43.

**Potter County**

Amarillo Oil Co.'s No. 5 Lee Bivins-A, drilling 2,337 feet, Section 25, Block O 18; No. 1 Fuqua, drilling 525 feet, Section 4. The California Co.'s No. 1 G. A. Carey, building rig, C SW NW NE, Section 6, Block Z-6, John H. Gibson Survey. Gulf Production Co.'s No. 1 W. H. Bush, underreaming at 3,030 feet, Section 89, Block 9. Farmers Oil & Gas Co.'s No. 1 J. A. Jones, spudding. Kelly & Harris' No 1 Bush, location, Section 161, Block 9.

**Roberts County**

Gibson Oil Corp.'s No. 1 T. S. Jones, drilling 250 feet, Section 109, Block C. Charles Page and others' No. 1 Hamilton Tract 2, cementing 12-inch, 482 feet. Murphy and others' No. 1 A. W. Gill, spudded and shut down at 160 feet, Section 31, Block M-2. Pan-State Oil Co.'s No. 1 A. H. Tandy, rig, Section 179, Block 42. Pettijohn and others' No. 1 J. A. Meade, spudded and shut down for water, Section 29, Block B-1. Trammel and others' No. 1 A. H. Tandy, spudded and shut down for water, School Land.

**Sherman County**

Eclipse Drilling Co.'s No. 1 Lee Bivins, rigging up, Section 35, Block 2. Get Oil Co.'s No. 1 Bivins, shut down at 210 feet, Section 35, Block 3-B. Phillips Petroleum & Savoy Oil Co.'s No. 1 Roach, drilling 1,260 feet, Section 161, Block 1-C.

**Wheeler County**

American Refining Co.'s No. 1 E. E. Carlton, location, Section 29, Block 13. Boyles & Johnson's No. 1 S. L. Lewis, rig. Gibson Oil Corp.'s No. 1 W. E. Bentley, 9,000,000 feet of gas 2,263-64 feet; No. 2 H. C. Phillips, rig and tools, Section 41, Block 24; No. 4 H. C. Phillips, drilling 1,160 feet, Section 41, Block 24. Hill, Cook & Riley's No. 1 L. H. Webb, spudded 150 feet and shut down, Section 61, Block 24. Laycock and others' No. 1 fee, drilling 1,680 feet, Section 10, Block 27. Mid-Kansas Oil & Gas Co.'s No. 1 W. C. Company, flowing 50 bbls. a day, 2,195-2,275 feet, Section 12, Block 27. Murchison & Fain's No. 1 Binkley & Cain, drilling 2,390 feet, Section 55, Block 24; No. 1 Binkley & Cain-A, location, Section 37, Block 24. J. J. Rock Co.'s No. 1 T C. Jones, shut down at 1,300 feet, Section 1, Block 24. Scott, Allen & Bledsoe's No. 1 J. H. Jackson, drilling 875 feet, Section 11, Block 27. Scott & Varner's No. 1 J. H. Jackson, shut down at 2,265 feet, Section 11, Block 27. Smith and others' No. 1 W. J. Johnson, rig, Section 88, Block A-5. Smith, Brady and others' No. 1 P. J. Screnson, shut down at 312 feet, Section 53, Block A-4 The Texas Company's No. 1 Smith (Lewis), drilling 900 feet, Section 40, Block 24. Texhoma Oil & Refining Co.'s No. 1 Company averaged 297 bbls. for 5 days, 2,236 90 feet, Section 12, Block 27. Upham Gas Co.'s No. 1 Coby, shut down at 260 feet, Section 88, Block 17; No. 1 Martin, drilling at 225 feet, Section 89, Block 17; No. 1 Alexander, rigging up tools, Section 92, Block 17; No. 1 Griswald, rig, Section 1, Block 24. E. L. Woodley, Jr.'s No. 1 Woodley, Sr., drilling at 1,520 feet, Section 13, Block A-5. Vaughn and others' No 1 O'Gorman, drilling 750 feet, Section 83, Block 17. World Oil Co.'s No. 1 Jackson, rig, Section 11, Block 27.

**DAILY AVERAGE PRODUCTION AMARILLO DISTRICT**

**Week Ending September 25, 1926**

**Hutchinson County**

| Company— | Wells | Dly. Av. |
|---|---|---|
| Alaska Pet. Co. | 1 | 75 |
| Amerada Pet. Corp. | 8 | 825 |
| American Ref. Co. | 2 | 105 |
| Apex Oil Co. | 2 | 300 |
| Badger Oil Co. | 2 | 205 |
| R. G. Barnum | 1 | ... |
| Buffalo Oil Co. | 1 | 30 |
| Candian River Oil Co. | 4 | 485 |
| Canyon Oil Co. | 4 | 3,500 |
| Center Dome Oil Co. | 1 | ... |
| Centerfield Oil Co. | 1 | ... |
| Coble-Whittenburg | 3 | 775 |
| Currie Bros. and J. R. Phillips | 2 | 100 |
| Cockrell & McIlroy | 3 | 547 |
| Delmar Oil Co. | 1 | 25 |
| Derby Oil Co. | 4 | 1,375 |
| Devonian Oil Co. | 3 | 850 |
| Dixon Creek Oil Co. | 21 | 6,545 |
| Double Five Oil Co. | 1 | 75 |
| Douglas Oil Co. & Cline | 1 | 20 |
| E. J. Cunningham et al | 3 | 1,175 |
| Echo Co. | 3 | 1,175 |
| Empire Gas & Fuel Co. | 5 | 715 |
| Fly-Blackburn Oil Co. | 2 | 250 |
| Gates Oil Co. | 4 | 405 |
| Goldelline Oil Co. | 2 | 360 |
| Golding & Phillips | 1 | ... |
| Gulf Prod. Co. and Panhandle | 31 | 6,040 |
| Gulf Production Co. | 18 | 4,460 |
| Heywood et al | 2 | ... |
| J. K. Hughes Dev. Co. | 12 | 2,100 |
| Holmes, Currie & McKnight | 2 | 350 |
| W. H. Holmes | 1 | 235 |
| Hutchinson Co. Oil Co. | 1 | ... |
| Dan A. Japhet | 2 | 605 |
| J. H. Lenix | 1 | ... |
| Lenix & Patterson | 1 | 270 |
| Lucky 10 Oil Co. | 3 | 1,150 |
| Marland Oil Co. | 34 | 18,015 |
| Midwest Exploration Co. | 5 | 350 |
| Minnehoma Oil Co. & Kistler | 1 | 235 |
| McMan Oil & Gas Co. | 13 | 6,355 |
| McIroy & Herring | 4 | 450 |
| S. D. & W. W. McIlroy | 5 | 1,850 |
| McIlroy Bros. et al | 3 | 340 |
| J. H. Middleton | 3 | 70 |
| Murchison & Fain | 1 | 360 |
| Newby Oil Co. | 1 | 55 |
| New Domain Oil Co. | 3 | 160 |
| Phillips & Heywood | 2 | 2,140 |
| J. R. Phillips | 1 | 25 |
| Phillips Petroleum Co. | 61 | 20,405 |
| Prairie Oil & Gas Co. | 20 | 3,510 |
| Relief Oil Co. | 3 | 1,250 |
| Riley & Holmes | 1 | 360 |
| Roxana Pet. Corp. | 8 | 2,145 |
| Ryan Petroleum Co. | 3 | 530 |
| Skelly Oil Co. | 12 | 6,750 |
| Skiatex Oil Co. | 4 | 875 |
| J. L. Smith | 2 | 275 |
| Smith & Byrum | 2 | 400 |
| Spring Creek Oil Co. | 4 | 825 |
| Summit Oil Co. | 2 | 370 |
| Sunny Jim Oil Co. | 5 | 650 |
| Sunburst Oil Co. | 2 | 1,300 |
| Travelers Oil Co. | 2 | 660 |
| Triangle Oil Co. | 2 | 2,820 |
| J. D. Ward | 1 | 65 |
| J. D. Ward et al | 1 | 55 |
| Westex Oil Co. | 7 | 3,570 |
| White Eagle Oil & Ref. Co. | 16 | 2,600 |
| J. O. Whittington | 1 | ... |
| Total Hutchinson County | 396 | 114,950 |
| Average per well | | 290 |

**Carson County**

| | | |
|---|---|---|
| Amarillo Oil Co. | 1 | ... |
| American Refining Co. | 7 | 535 |
| Gates Oil Corp. | 1 | 10 |
| Gulf Production Co. | 14 | 360 |
| Marland Oil Co. | 12 | 2,565 |
| Roxana Pet. Corp. | 1 | 125 |
| W. W. Slik et al | 3 | 90 |
| Skelly Oil Co. | 2 | 85 |
| Sunny Jim Oil Co. | 2 | 45 |
| The Texas Company | 11 | 320 |
| Total Carson County | 54 | 4,135 |
| Average per well | | 76 |

**Gray County**

| | | |
|---|---|---|
| Empire Gas & Fuel Co. | 1 | 10 |
| Gulf Production Co. | 1 | 95 |
| Magnolia Petroleum Co. | 1 | 50 |
| McMan Oil & Gas Co. | 1 | 110 |
| Prairie Oil & Gas Co. | 3 | 1,035 |
| Wilcox-Pampa Oil Co. | 7 | 2,955 |
| The Texas Company | 1 | 15 |
| Total Gray County | 15 | 4,270 |
| Average per well | | 285 |

**Potter County**

| | | |
|---|---|---|
| Amarillo Oil Co. | 1 | 30 |

**Wheeler County**

| | | |
|---|---|---|
| Gibson Oil Corp. | 2 | 150 |
| Continental Oil Co. | 2 | 275 |
| Mid-Kansas Oil & Gas Co. | 1 | 35 |
| Midwest Exploration Co. | 3 | 15 |
| Total Wheeler County | 8 | 475 |
| Average per well | | 59 |
| Grand total Panhandle | 474 | 123,860 |
| Average per well | | 261 |
| Average per well last week | | 278 |
| Total Panhandle 4 weeks ago | 352 | 116,690 |
| Average per well 4 weeks ago | | 331 |

## NORTH TEXAS FIELDS

(Continued from Page 36)

made 20 bbls. at 1,148-62 feet, total depth 1,164 feet; No. 4 Howard-A made 50 bbls. at 1,337-53 feet; No. 3 Salmon and others was a 15-bbl. producer at 950-56 feet. Gracey & Kahle's No. 3 Maddox pumped 72 bbls. at 847-64 feet. Harris & Simons' No. 3 Maddox pumped 65 bbls. at 835-48 feet. Humble Oil & Refining Co.'s No. 4 Maddox was plugged back from 900 feet to sand at 874-79 feet and made 30 bbls. Olean Petroleum Co.'s No. 6 Maddox produced 60 bbls. of oil and 30 bbls. of salt water at 864-83 feet.

Pure Oil Co.'s No. 3 Maddox-C blew out at 910 feet and was spraying 80 bbls. of oil with 5,000,000 feet of gas. The Texas Company's No. 16 Gist-A was making 50,000,000 feet of gas while drilling at 805 feet; No. 2 Howard-B made 24 bbls. at 1,165-82 feet. Texhoma Oil & Refining Co.'s No. 4 Bouldin-A made 116 bbls. at 1,089-1,108 feet, total depth 1,109 feet; No. 10 Howard-A pumped 47 bbls. from sands at 1,109-15 and 1,129-32 feet, total depth 1,134 feet; No. 1 Howard-B pumped 10 bbls. at 1,164-68 feet, total depth 1,176 feet; No. 3 Maddox-A pumped 81 bbls. in 19 hours at 882-92 feet; No. 8 Rowland had sands at 1,057-77 and 1,092-96 feet, and sandy shale at 1,096-1,112 feet, making 27 bbls.; No. 9 Rowland pumped 80 bbls. at 1,054-76 feet, total depth 1,079 feet; No. 10 Rowland pumped 25 bbls. from sand at 1,045-75 feet, total depth 1,077 feet; No. 1 Rowland and others-B swabbed 205 bbls. at 1,023-32 feet and at 1,071-1,101 feet.

**Shackelford County**

Albany Oil Co.'s No. 9 Moberly was estimated good for 40 bbls. at 1,195-1,200 feet. Amerada Petroleum Corp.'s No. 1 Davis was dry and abandoned at 2,120 feet. Carter Development Co.'s No. 2 Nail was a duster at 2,017 feet and so was No. 3 Nail at 2,004 feet. Harris' No. 1 Matthews had 300 feet of oil in the hole from sand at 1,054-59 feet and was shut down for orders. Hope Petroleum Co.'s No. 9 Reynolds swabbed 40 bbls. at 1,054-60 feet, total depth 1,069 feet; No. 10 was dry and abandoned at 1,820 feet; No. 11 made 60 bbls. from sand at 1,410-12 feet, total depth 1,416 feet. Humble Oil & Refining Co.'s No. 12 Cook was a failure and plugged at 1,440 feet.

Merry Brothers & Perini's No. 2 Newell was dry and abandoned at 1,543 feet. Roeser & Pendleton and Marland Oil Co.'s No. 25 Cook A-84 was a 100-bbl. producer at 1,376-80 feet; No. 27-A-84 was also good for 100 bbls. at 1,390-96 feet; No. 28-A-84 made 100 bbls. at 1,353-60 feet. Roeser & Pendleton's No. 11 Cook B-84 made 150 bbls. at 1,306-27 feet; No. 12-B-84 also made 150 bbls. at 1,323-31 feet.

**Stephens County**

Atkinson & Sandefer's No. 1 Vick was dry and abandoned at 3,616 feet. Humble Oil & Refining Co.'s No. 1 Richardson was completed for 10,000,000 feet of gas at 3,801-47 feet. Mid-Kansas Oil & Gas Co.'s No. 19 J. W. Hill made 30 bbls. at 3,192-3,217 feet. Phillips Petroleum Co.'s No. 1 Moon was shot with 60 quarts at 3,918-64 feet, total depth 3,986 feet, but no oil resulted and it will be given another shot. Texas Fidelity Oil Corp.'s No. 1 Pratt was deepened 16 feet to total depth of 2,006 feet and the flow was increased to 600 bbls.

**Throckmorton County**

Red Bank Oil Co.'s No. 1 Elliott flowed 125 bbls. in 24 hours from brown lime at 4,129-33 feet but was not completed.

**Wichita County**

Bridwell & Heydrick's No. 8 Ward & Todd was estimated at 400 to 500 bbls. from sand at 1,881-90 feet. Clark, Waggoner & Hammond's No. 1 Ward & Todd was recompleted in sandy lime at 1,861-71 feet and flowed 300 bbls. Clark and others' No. 8 Ward & Todd flowed 1,250 bbls. from solid sand at 1,846-59 feet and broken sand at 1,859-78 feet. Dale Oil Corp.'s No. 14 Burnett pumped 18 bbls. at 1,367-74 feet. Jaffee and others' No. 4 Mitchell pumped 250 bbls. at 1,876-77 feet. Kimmel & Dillard's No. 2 Fassett & Tuttle was dry and abandoned at 1,955 feet.

Magnolia Petroleum Co.'s No. 1 Fassett & Tuttle was dry and abandoned at 2,220 feet; No. 72 Honaker made 6 bbls. at 1,028-35 feet. Ryan Petroleum Co.'s No. 83 Nance was estimated good for 4 bbls. of oil and 15 bbls. of water at 507-24 feet. Sessums and others' No. 1 Barwise was dry and plugged at 2,004 feet. Simms Oil Co.'s No. 1 Chilson pumped 175 bbls. at 1,150-54 feet and 1,168-82 feet; No. 2 Chilson swabbed 149 bbls. at 1,166-79 feet and was being put on the pump. Stidham & Thrasher's No. 1 Ward & Todd, which was flowing 400 bbls. at 1,855-66 feet, was deepened to 1,872 feet and increased to 600 bbls. Texhoma Oil & Refining Co.'s No. 1 Burnett-O pumped 100 bbls. at 1,556-58 feet and 1,569-80 feet.

**Wilbarger County**

Empire Gas & Fuel Co.'s No. 50 Stephens made 40 bbls. at 1,343-59 feet. Humble Oil & Refining Co.'s No. 7 Waggoner-M swabbed 100 bbls. from lime at 2,322-40 feet; No. 11 Waggoner-M also swabbed 100 bbls. at 2,352-74 feet; No. 12 Waggoner-O pumped 35 bbls. from sand at 1,917-35 feet; No. 2 Waggoner-P swabbed 124 bbls. in 18 hours from lime at 2,366-89 feet. Milham Corp. of Texas' No. 6 Waggoner-H swabbed 10 bbls. from sandy lime at 2,550-62 feet; No. 3 Waggoner-L swabbed 91 bbls. from sand at 1,888-1,905 feet.

Phillips Petroleum Co.'s No. 1 Waggoner-C pumped 110 bbls. in 24 hours from 2,345-49 feet and 2,351-69 feet, after having swabbed 175 bbls. in 18 hours; No. 6 Waggoner-H was flowing 200 bbls. from sand at 2,333-37 feet and drilling deeper; No. 7 Waggoner-H swabbed 216 bbls. and pumped 175 bbls. from oil sand at 2,396-2,416 feet and will be deepened; No. 2 Waggoner-R swabbed 80 bbls. at 2,329-41 feet. Waggoner Refining Co.'s No. 1 Waggoner-D swabbed 30 bbls. from oil sand at 1,940-56 feet; No. 2 Waggoner-D was estimated good for 40 bbls. at 1,943-48 feet but will be deepened. Whitehead and others' No. 1 Milner was dry and abandoned at 2,503 feet.

**Young County**

Bloodworth and Kerbow's No. 1 Montgomery was dry and abandoned at 605 feet. Chenault & Lea's No. 8 Rachuig was also a failure at 1,190 feet. J. W. Collier's No. 1 fee had oil sand at 543-46 feet and was being put on the pump but was not estimated as to output. Madden & Hunt's No. 7 Benson swabbed 240 bbls. from sand at 865-98 feet and was put on the pump. McElreath, Suggett & Phillips' No. 4 Snyder was dry and abandoned at 888 feet. Roberts Oil Corp. and Carter & Ruff's (formerly carried as Ruff and others) No. 6 Stewart pumped 35 bbls. from oil sand at 813-42 feet. The Texas Company's No. 17 Beardon pumped 153 bbls. in the first 16 hours from sand at 1,051-83 feet; No. 1 Prideaux pumped 120 bbls. from sand at 713-28 feet. Tidal Oil Co. and others' No. 2 Benson made 32 bbls. at 914-26 feet; No. 12 Benson-A was dry and abandoned at 935 feet, with no sand; No. 13 Benson-A made 27 bbls. at 918-27 feet; No. 14 made 22 bbls. at 915-27 feet; No. 15 made 25 bbls. at 896-922½ feet; No. 16 made 40 bbls. at 884-927½ feet. Wo-Mac Oil Co.'s No. 6 Stewart was dry and abandoned at 816 feet.

Atkinson & Sandefer's No. 3 Ford swabbed 15 bbls. from sand at 1,919-45 feet. Pitzer & Wests' No. 9 Keller-C pumped 20 bbls. at 1,948-53 feet.

## WEST TEXAS COMPLETIONS

**Crane County**

Magnolia Petroleum Co.'s No. 2 University swabbed 110 bbls. at 3,001-27 feet. Marland Oil Co.'s No. 1-D Hughes flowed 62 bbls. an hour, no water, at 2,320-40 feet; No. 1 Hughes-Gibbs, after plugging back from 2,335 feet from 2,345 feet pumped 101 bbls. from pay topped at 2,308 feet. The Texas Company's No. 2 King was shot with 60 quarts at 2,302-17 feet, total depth 2,353 feet and pumped 126 bbls.; No. 1-F Union Land Co. averaged 14 bbls. of oil and 33 bbls. of water on the pump from pay at 3,014-16 feet.

**Crockett County**

J. D. Young's No. 1 R. Massie was preparing to plug at 2,200 feet.

**Reagan County**

Texon Oil & Land Co.'s No. 47 University flowed 542 bbls. at 2,960-73 feet.

**Upton County**

Dixie Oil Co.'s No. 7 Burleson flowed 1,259 bbls. of oil and 23 per cent water through a half-inch choke September 21, and 1,375 bbls. the next day. Pay was found at 2,315 feet, first pay at 2,240 feet. Humble Oil & Refining Co.'s No. 2 A. S. Burleson pumped 141 bbls. from

2,161-85 feet. Marland Oil Co.'s No. 13 Sanger pumped 105 bbls. after a 160-quart shot at 2,188-2,260 feet; No. 2-A Burleson pumped 10 bbls. at 2,250 feet; No. 3-A swabbed 35 bbls. before a shot of 60 quarts at 2,141-58 feet, pay being at 2,125-95 feet; No. 21 Burleson made 50 bbls. after a shot of 60 quarts at 2,-170-85 feet. It was plugged back from 2,240 to 2,220 feet; No. 22 Burleson pumped 90 bbls. at 2,105-2,240 feet; No. 23 swabbed 200 bbls. at 2,120-50 feet; No. 24 pumped 100 bbls. after a 240-quart shot at 2,125-73 feet, pay having been at 2,120-73 feet.

Republic Production Co.'s No. 4 Baker swabbed 40 bbls. at 2,215-32 feet. Roxana Petroleum Corp.'s No. 2 Della Bowen pumped 172 bbls. at 2,116-2,215 feet. Sun Oil Co.'s No. 4 Burleson pumped 85 bbls. at 2,085-2,129 feet; No. 5 pumped 75 bbls. at 2,067-2,131 feet. The Texas Company's No. 1 H. King pumped 20 bbls. of oil and 20 bbls. of water after a 60-quart shot at 2,033-43 feet, with pay at 2,005-2,177 feet. Texas Pacific Coal & Oil Co.'s No. 1 Milton Shirk pumped 103 bbls. at 2,163-85 feet.

## WEST TEXAS WILDCATS

### Andrews County

Amon G. Carter & Zweifel's No. 1 Cowden, moving in material, C SE, Section 18, Block A-52, Public school land. H. Zweifel and others' No. 1 Means, location, C SE, Section 8, Block 35, Public school land. Maer & Staniforth's No. 1 W. S. Taylor, location, C SE, Section 15, Block A-42, Public school land.

### Brewster County

J. Rosenborough & Skinner's No. 1 Skinner, fishing casing at 1,055 feet.

### Coke County

Lipan Oil Co.'s No. 1 E. C. Rawlings, shut down at 2,640 feet.

### Concho County

The Exploration Co.'s No. 1 Hartgrove, drilling at 610 feet; Kemper, Kimberlin and others' No. 1 Schultz, cleaning out at 1,520 feet, NE NE, Section 139, Block 72, T. & N. O. Survey. Culbertson Brothers' No. 1 W. S. See, drilling at 875 feet. Gene Mays and others' No. 1 Hartgrove, drilling at 925 feet, NW SW, Section 312.

### Crane County

Cranfill Brothers' No. 1 P. J. Lea, shut down for orders at 3,505 feet. Duffy Brothers and others' No. 1 Cowden Brothers, drilling at 450 feet, Section 65, Block X; No. 1 Griffith, location, SE SE, Section 16, Block X. Gulf Production Co.'s No. 1 Crier-McIlroy, shut down for storage, C SE SW, Section 198, Block F; No. 2 Crier-McIlroy, shut down temporarily, NW SW, Section 198, Block F, same survey; No. 3 Crier-McIlroy, shut down temporarily, C SE NE, Section 198, Block F, same survey; No. 2 T. J. McIlroy, fishing two string tools at 2,165 feet, NE SE, Section 203, Block F, same survey; No. 3, shut down for storage, SE NE, Section 203, Block F, same survey; No. 1 State-Z. T. Lasseter, skidded rig 25 feet north and spudded new hole, SW SW, Section 35, Block 30, University. Independent Oil & Gas Co.'s No. 1 E. S. Hughes, top salt at 653 feet, drilling at 2,230 feet; No. 2 Taylor, location, Section 6, H. T. Sapp Survey; No. 3 Taylor rigged up and shut down; No. 5 Taylor, top salt 442 feet, drilling at 1,-140 feet, Section 6, H. T. Sapp Survey; No. 7 Taylor, fishing at 2,575 feet for tools; No. 8 Taylor, shut down at 2,355 feet; No. 9 Taylor, drilling at 225 feet; No. 10 Taylor, rig. Magnolia Petroleum Co.'s No. 2 University Church, swabbing 100 bbls. at 3,001-27 feet, SE SE, Section 34, Block 30, University; No. 1 State-Lasseter, location; No. 2 O'Keefe, spudding, Section 38, Block 30, University. Marland Oil Co.'s No. 1 Mary Dawson, rigging up, NE cor. Section 84, Block X; No. 2-C E. S. Hughes, drilling, NW NE NE, Section 86, Block X, C. C. S. D. & R. G. N. G. Survey; No. 3-C E. S. Hughes, top salt 640 feet, drilling at 1,170 feet, SE NE NE, Section 86, Block X, C. C. S. D. & R. G. N. G. Survey; No. 1-D E. S. Hughes, flowing 62 bbls. per hour, at 2,320-40 feet, SW cor. Section 88, Block X, C. C. S. D. & R. G. N. G. Survey. Prairie Oil & Gas Co.'s No. 1 University, rigging up; No. 2, rig. The Texas Company's No. 5 H. M. King, location, SW SW, Section 85, Block X; No. 6, total depth 2,331 feet, top 2,301 feet, 800 feet of oil in the hole; No. 7 top salt at 645 feet, drilling at 1,-915 feet, SE SW SE, Section 85, Block X, same survey. Texas Development Co.'s No. 1 Cowden, shut down at 3,820 feet. Zweifel and others' No. 1 Cowden, location.

### Crockett County

Archer Oil Co.'s No. 1 Couch, location C NE, Section 18, Block Q-R, D. & S. E. Survey. Cumberland Oil & Gas Co.'s No. 1 Couch, shut down at 1,835 feet. Gulf Production Co.'s No. 1-D L. P. Powell, drilling at 1,425 feet, Section 62, Block B-B, G. C. & S. F. Survey. Humble Oil & Refining Co.'s No. 1-B Powell, spudded 275 feet, Section 63, Block B-B, E. L. & R. Survey. J. K. Hughes Development Co.'s No. 2-A Powell, drilling at 725 feet, Section 2, Block BB-2, G. C. & S. F. Survey; No. 3-A, straightening hole at 2,125 feet, Section 2, Block BB-2, N. A. Miller Survey; No. 2-B, top salt 1,155 feet, drilling at 1,200 feet, Section 63, E. L. & R. R. Survey. Republic Production Co.'s No. 1 L. P. Powell, top salt at 1,125 feet, drilling at 2,135 feet, Section 62, Block BB, E. L. R. R. Survey. William Schaffer and others' No. 1 University, shut down at 2,191 feet, C SE SE, Section 9, Block 47, University. Ben Simon and others' No. 1 Shannon, hole full of water at 2,-518 feet, drilling at 2,610 feet, C SW, Section 10, Block Y-Z, E. L. R. R. Survey. J. D. Young & Cromwell's No. 1 R. Massie, show of oil at 2,109 feet, but preparing to plug at 2,200 feet; No. 1 Shannon, drilling at 365 feet, SE NE, Section 4, Block 10, H. F. Wilcox Oil & Gas Co.'s No. 1 University, drilling at 3,780 feet, C SE SE, Section 20, Block 30, University. F. P. Zoch and others' No. 1 University, shut down at 2,005 feet.

### Culberson County

James H. Gardner and others' No. 1 Radford, rig on the ground, C SE, Section 29, Block 62, Public school land. Plymouth Oil Co.'s (Big Lake), No. 1 C. L. Cass, shut down at 100 feet, C W half, Section 44, Block 45, Public school land. Pure Oil Co.'s No. 1 Kloch & Rumsey, rig.

### Ector County

J. S. Cosden and others' No. 1-A G. W. Connell, rainbow show of oil at 3,-283 feet, show of gas at 3,365 feet, shut down at 3,375 feet, C NE, Section 13, Block B-16, Public school land; No. 1-B W. E. Connell, drilling at 3,760 feet, C NW, Section 16, Block B-16, Public school land. The Exploration company's No. 1 Kloh & Rumsey, drilling at 3,660 feet, CEL, Section 39, Block 45, Public school land; No. 1 J. D. Slator, rigging up, C SW, Section 10, Block 45, T. & P. Survey, Township 1s. Llano Oil Co.'s No. 1 E. P. Cowden, drilling at 2,704 feet. Sid Richardson's (Leigh Taliaferro) No. 1 Henderson, top salt 1,665 feet, drilling at 1,685 feet, C SE, Section 3, Block 43, T. & P. Survey, Township 3s. Simms Oil Co.'s No. 1 W. P. Edwards, drilling at 3,080 feet, C SW, Section 44, Block 43, T. & P. Survey, Township 3s. F. E. Skinner and Eastland Oil Co.'s No. 1 J. W. Buchanan, shut down for orders at 3,523 feet, C NW, Section 20, Block 45, T. & P. Survey, Township 2s.

### Fisher County

Ideal Oil Co.'s No. 1 W. F. Martin, drilling at 3,140 feet. E. W. Raney's No. 1 J. L. Marberry, drilling at 1,500 feet.

### Gaines County

Huconey Oil Co.'s No. 1 Lindsey, shut down at 3,255 feet, contract complete.

### Garza County

Deep Rock Oil Co.'s No. 1 S. M. Swenson, drilling at 3,240 feet. Emerald Oil Co.'s No. 1-A Connell, shut down at 3,200 feet; No. 1 J. M. Boren, plugged back to 2,050 feet from 2,600 feet, shot with 180 quarts at 1,970-2,002 feet, swabbed 10 bbls. oil and much water. Packer was set at 1,635 feet and the well was put on the pump.

### Glasscock County

Mascho & Marland Oil Co.'s No. 1 Calder, running 8-inch at 2,075 feet. Plateau Oil Co.'s No. 1 L. S. Bell, fishing at 415 feet.

### Howard County

Lockhart & Co.'s No. 1 Roberts, cleaning out 650 feet; No. 1 Human (Scott), 2,000,000 feet of gas at 1,620 feet, showed salt water at 1,525-50 feet, fishing at 1,-790 feet; No. 1-A Otis Chalk, drilling at 870 feet. Magnolia Petroleum Co.'s No. 1 Mary Chalk, drilling at 850 feet; No. 2 Otis Chalk, swabbed 75 bbls. after a shot at 1,550-1,619 feet; No. 3, drilling at 670 feet; No. 3-A Otis Chalk (was Owens & Sloan's No. 3 Chalk) standardizing at 1,582 feet. Marland Oil Co.'s No. 3 Otis Chalk, drilling at 1,000 feet; No. 4 Otis Chalk, rigging up 330 feet from south line and 990 feet from east line of lease. Reeves, Apperman and others' No. 1 H. R. Clay, underreaming 10-inch at 815 feet.

### Jeff Davis County

Herbert Oil Co.'s No. 1 T. M. Wingo, underreaming 6-inch at 3,012 feet. Humble Oil & Refining Co.'s No. 1 W. W. McCutcheon, drilling at 3,115 feet. J. K. Hughes Development Co.'s No. 1 J. Z. Means, drilling at 440 feet.

### Kent County

The Texas Company's No. 1 Barron, running 5⅞-inch at 4,331 feet.

### Kimble County

Dixie Oil Co.'s No. 1 Harrison, drilling at 480 feet.

### Loving County

Lockhart & Co.'s No. 1 E. L. Allen, drilling at 2,806 feet.

### Lynn County

The Hart Oil Corp.'s No. 1 C. O. Edwards, shut down at 1,400 feet.

### Menard County

J. R. Lewis and others' No. 1 White, spudding at 180 feet.

### Midland County

M. Agress and others' No. 1 Jones, shut down at 2,115 feet.

### Mitchell County

Teas & Stivers' No. 1 Hardee, fishing casing at 485 feet. B. H. Cogdell's No. 1-C F. E. McKenzie, shut down at 125 feet. Owens & Sloan's No. 1 C. P. Conoway, drilling at 2,610 feet. Magnolia Petroleum Co.'s No. 2 Foster, drilling at 1,500 feet; No. 1 G. W. Womack, shut down at 2,953 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Ellwood, drilling at 1,-300 feet. The California Co.'s No. 1 J. J. Handley, swabbed 8 bbls. at 2,930-3,035 feet. F. P. Zoch and others' No. 1 J. J. Ford, drilling at 1,425 feet.

### Nolan County

Huconey Gas Co.'s No. 1 Arthur Sears, drilling at 2,150 feet.

### Pecos County

Tom Adams Oil Co.'s No. 2 Gray, temporarily abandoned at 115 feet. Benedum & Trees' No. 1 J. C. Trees, drilling at 200 feet. Buell and others' No. 1 Hagan (W. W. Batcheler) shut down at 540 feet. Dixie Oil Co.'s No. 1 Hershenson, drilling at 5,300 feet. Cromwell & Kimberlin's No. 1 Scharff Blackman, spudding. Transcontinental Oil Co.'s No. 1 Perry, straightening hole at 3,535 feet. Southern Development Co.'s No. 1 R. G. Heiner, temporarily abandoned. Quinby Oil Co.'s No. 1 Townsite, shut down at 3,280 feet, show of gas at 3,260 feet. West Texas Exploration Co.'s No. 1 Macy, temporarily abandoned at 1,160 feet.

### Presidio County

Headlock & Miller's No. 1 Tootle estate, shut down at 2,340 feet. H. D. Camp and others' No. 1 University, shut down at 2,786 feet. Marland Oil and Texon Oil Co.'s No. 1 Sawyer, drilling at 2,342 feet after setting casing by tools. Moody Oil Corp.'s No. 1 Sawyer, spudding at 150 feet. Roxana Petroleum Corp.'s No. 1 Boyd, drilling at 725 feet. Ben Simon and others' No. 1 R. A. Walters, drilling at 2,885 feet, show of oil at 2,590 feet, enough sulphur water to drill with, at 2,700 feet.

### Reeves County

Schooler, Slack and others' No. 1 Abram, drilling at 2,500 feet. Grisham & Hunter's No. 1 State land, underreaming at 825 feet.

### Sterling County

Co-Operative Lease & Development Co.'s No. 1-A E. W. Douthett, shut down at 3,100 feet. The Exploration Co.'s No. 1 C. A. Boone, drilling at 2,550 feet. H. D. Runnels' No. 2 L. T. Clark, shut down for orders at 1,175 feet.

### Runnels County

Red Bank Oil Co.'s No. 1 Fowler, drilling at 650 feet. F. P. Zoch and others' No. 1 Bruce, fishing at 325 feet.

### Schleicher County

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, spudded and shut down. Cope & Dalton's No. 1 Sol Meyer, drilling at 1,525 feet.

### Stonewall County

Arkansas Gas & Fuel Co.'s No. 1 Craft, drilling at 4,270 feet, black lime. Ward Syndicate's No. 1 J. A. Ward, shut down at 3,828 feet.

### Terrell County

Sun Oil Co.'s No. 1 Scott, straight-reaming 900 feet. W. T. Williams and others' No. 1 Robertson, drilling at 1,-690 feet.

### Terry County

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, rig.

### Tom Green County

M. D. Bryant and others' No. 1 Llano County school land, trying to run 6⅝-inch at 2,980 feet. Texon Oil & Land Co. and Marland Oil Co.'s No. 2 Sorrell, drilling at 250 feet. World Oil Co.'s No. 1 Pulliam, set 6-inch at 3,382 feet, and cleaning out.

### Upton County

Amerada Oil Corp.'s No. 1 Ed. S. Hughes, rigging up. Dixie Oil Co.'s No. 8 Burleson, drilling at 2,190 feet, top of pay at 2,098 feet; No. 5 Hughes, top salt at 515 feet, drilling at 1,930 feet; No. 6 Hughes, top of salt at 500 feet, 1,946 feet running 6-inch; No. 7 Hughes, top salt 480 feet, drilling at 1,160 feet. W. H. Dunning and others' No. 1 Crier-McIlroy, drilling at 2,225 feet. Gulf Production Co.'s No. 2 M. L. Baker, shot with 180 quarts at 2,165-2,239 feet, total depth 2,240 feet, 12 gallons of oil and 3 gallons of water per hour; plugged and abandoned; No. 1 M. L. Baker-B, swabbed 65 bbls. in 10 hours at 1,400 feet oil in hole, 2,270 feet total depth. Gulf Production Co.'s No. 1 J. H. Shirk-D, 1,500 feet of oil and some water in hole at 2,286-88 feet; No. 1 Sanger, total depth 3,275 feet, brown lime, hole full of water, drilling up underreamer lugs. Humble Oil & Refining Co.'s No. 3 A. S. Burleson, top salt at 565 feet, drilling at 1,850 feet; No. 4 A. S. Burleson, top salt 545 feet, drilling at 1,425 feet; No. 5, building rig; No. 1 J. T. McIlroy, top lime at 3,438 feet, drilling at 3,455 feet. Independent Oil & Gas Co.'s No. 3 Emma Wooley, top salt at 495 feet, drilling at 1,915 feet; No. 4 shut down at 1,966 feet; No. 5, rig; No. 8 moving in material; No. 3 Burleson, shut down at 2,-200-15 feet, with 300 feet of oil in the hole; No. 4 building rig, one location east of No. 2. Johnson & McCamey's No. 1 Shirk, top salt 695 feet, running 6-inch at 2,150 feet (taken over by Wentz Oil Corp.). Kirkwood and others' No. 1 Rankin, rainbow show at 3,820 feet, shut down at 3,950 feet, sulphur water at 3,-930-38 feet. McMan Oil & Gas Co.'s No. 2 M. L. Baker, rig. Marland Oil Co.'s No. 1 Shirley, building rig. Marland Oil Co. and Texon Oil & Land Co.'s No. 1 Halff, drilling 820 feet. Roxana Petroleum Corp.'s No. 2 Hughes, moving in material; No. 3 Della Bowen, top salt 515 feet, drilling at 1,815 feet; No. 2 Estep, building rig. Sartain & Davis' No. 1 Bull, top salt at 1,660 feet, shut down at 1,660 feet. Skelly Oil Co.'s No. 1 O. F. Jones, top salt at 1,761 feet, drilling at 2,485 feet. Sun Oil Co.'s No. 4 Burleson, top pay 2,085 feet, drilling at 2,095 feet, 250 feet of oil in the hole; No. 5 Burleson, top pay 2,067 feet, drilling at 2,080 feet, 200 feet of oil in the hole. The Texas Company's No. 8 R. King, top salt 485 feet, drilling at 1,560 feet; No. 9, top salt 510 feet, drilling at 1,730 feet; No. 1 A. S. Burleson, drilling at 2,144 feet; No. 3 A. S. Burleson, drilling at 425 feet; No. 4 top salt 555 feet drilling at 1,360 feet. Texas Pacific Coal & Oil Co.'s No. 2 Shirk, drilling at 2,125 feet; No. 3, rig; No. 4, rig.

### Val Verde County

A. Blume's No. 1 Moore estate, drilling at 2,540 feet. Curse Williams' No. 1 Holman, rigging up. East Del Rio Oil Co.'s No. 1 Russell and Weatherbee, shut

down at 2,954 feet. Hiawatha Oil Co.'s No. 1 Sellers, rigging up. Independent Operators' No. 1 Whitehead, shut down at 3,712 feet. Plateau Oil Co.'s No. 1 Harrison, shut down for 6-inch casing at 3,156 feet. Transcontinental Oil Co.'s No. 1 W. S. Stevenson, drilling at 800 feet.

### Winkler County

R. S. Matthews and others' No. 1 Cowden Cattle Co., shut down at 160 feet spudding water well. F. P. Zoch and others' No. 1 John Sealy, shut down at 200 feet clearing titles. P. A. Westbrook and others' No. 1 T. G. Hendricks, deepened to 2,602 feet, fishing tools. Leigh Taliaferro's No. 1 Sealy, top salt at 1,035 feet, drilling at 2,450 feet. L. D. Ladd and others' No. 1 J. W. Amburgey, fishing for tools at 360 feet. Brandon & McCamey's No. 1 Kloh & Rumsey, drilling at 3,250 feet.

### NORTH CENTRAL TEXAS ESTIMATED PRODUCTION
**Week Ending September 25, 1926**

| | This Week | Last Week |
|---|---|---|
| Ranger District— | | |
| Brown County | 12,103 | 11,586 |
| Callahan County | 4,348 | 4,548 |
| Coleman County | 1,800 | 1,785 |
| Comanche County | 1,780 | 1,615 |
| Palo Pinto County | 435 | 434 |
| Ranger County | 5,520 | 5,580 |
| Shackelford County | 10,309 | 10,931 |
| Stephens County | 11,162 | 11,395 |
| Total Ranger District | 47,455 | *48,188 |
| Wichita Falls District— | | |
| Electra | 19,281 | 16,828 |
| Burkburnett | 11,702 | 11,705 |
| Iowa Park | 4,295 | 4,219 |
| Archer County | 30,854 | 30,677 |
| Clay County | 664 | 598 |
| Wilbarger County | 14,478 | 14,195 |
| Montague County | 8,155 | 7,484 |
| Young County | 8,356 | 8,522 |
| Jack County | 220 | 230 |
| Throckmorton County | 1,416 | 1,450 |
| Baylor County | 148 | 130 |
| Cooke County | 365 | 372 |
| Total Wichita Falls Dist. | 99,854 | 96,415 |
| West Texas District— | | |
| Big Lake Field | 28,838 | 29,780 |
| Crane County | 856 | 427 |
| Crockett County | 1,180 | 1,055 |
| Howard County | 377 | 338 |
| Mitchell County | 3,527 | 3,577 |
| Scurry County | 38 | 39 |
| Upton County | 8,725 | 7,125 |
| Jones County | 900 | 800 |
| Total West Texas Dist. | 44,441 | *42,341 |
| Grand Total | 191,750 | 187,744 |
| Increase | 4,006 | |

*Note—Jones County was included in the Ranger district last week, but was transferred to west Texas district this week, and totals of those districts for last week, shown above, were not changed.

### PRODUCTION BY FIELDS
**For Week Ending September 20, 1926**

| | |
|---|---|
| **Electra** | |
| Atlantic Oil Prod. Co. | 46 |
| Empire Gas & Fuel Co. | 727 |
| Gulf Prod. Co. | 871 |
| Humble Oil & Refg. Co. | 163 |
| Magnolia Pet. Co. | 3,383 |
| Panhandle Refg. Co. | 47 |
| Phillips Pet. Co. | 15 |
| Prairie Oil & Gas Co. | 91 |
| Rio Bravo Oil Co. | 529 |
| The Texas Company | 8,495 |
| Texhoma Oil Refg. Co. | 1,211 |
| Miscellaneous | 6,234 |
| Total | 16,822 |
| **Burkburnett** | |
| Gulf Prod. Co. | 447 |
| Humble Oil & Refg. Co. | 429 |
| Magnolia Pet. Co. | 2,429 |
| Panhandle Refg. Co. | 218 |
| Prairie Oil & Gas Co. | 21 |
| Simms Oil Co. | 13 |
| Sinclair Oil & Gas Co. | 50 |
| Skelly Oil Co. | 146 |
| Sun Oil Co. | 50 |
| The Texas Company | 362 |
| Texhoma Oil & Refg. Co. | 518 |
| Miscellaneous | 7,033 |
| Total | 11,707 |
| **Iowa Park** | |
| Atlantic Oil Prod. Co. | 55 |
| Gulf Prod. Co. | 112 |
| Humble Oil & Refg. Co. | 154 |
| Magnolia Pet. Co. | 309 |
| Panhandle Refg. Co. | 63 |
| Roxana Pet. Corp. | 9 |
| Simms Oil Co. | 82 |
| The Texas Company | 192 |
| Texhoma Oil & Refg. Co. | 535 |
| Miscellaneous | 2,709 |
| Total | 4,221 |
| **Wilbarger** | |
| Atlantic Oil Prod. Co. | 56 |
| Empire Gas & Fuel Co. | 857 |
| Gulf Prod. Co. | 55 |
| Humble Oil & Refg. Co. | 2,877 |
| Phillips Pet. Co. | 5,823 |
| Prairie Oil & Gas Co. | 112 |
| Roxana Pet. Corp. | 367 |
| The Texas Company | 19 |
| Texhoma Oil & Refg. Co. | 77 |
| Miscellaneous | 3,953 |
| Total | 14,196 |
| **Archer** | |
| Atlantic Oil Prod. Co. | 225 |
| Barnsdall Oil Co. | 939 |
| Cosden Co. | 364 |
| Empire Gas & Fuel Co. | 569 |
| Gulf Prod. Co. | 2,126 |
| Humble Oil & Refg. Co. | 1,083 |
| Independent Oil & Gas Co. | 5 |
| Magnolia Pet. Co. | 1,585 |
| Marland Oil Co. | 925 |
| Panhandle Refg. Co. | 127 |
| Phillips Pet. Co. | 576 |
| Prairie Oil & Gas Co. | 1,817 |
| Roxana Pet. Corp. | 465 |
| Simms Oil Co. | 1,077 |
| Sun Oil Co. | 246 |
| The Texas Company | 4,654 |
| Texhoma Oil & Refg. Co. | 2,682 |
| Tidal Oil Co. | 35 |
| Miscellaneous | 11,138 |
| Total | 30,638 |
| **Young** | |
| Atlantic Oil Prod. Co. | 749 |
| J. S. Cosden, Inc. | 213 |
| Gulf Prod. Co. | 193 |
| Humble Oil & Refg. Co. | 276 |
| Magnolia Pet. Co. | 133 |
| Marland Oil Co. | 2 |
| Panhandle Refg. Co. | 136 |
| Phillips Pet. Co. | 19 |
| Prairie Oil & Gas Co. | 1 |
| Roxana Pet. Corp. | 138 |
| Simms Oil Co. | 536 |
| Sinclair Oil & Gas Co. | 368 |
| Sun Oil Co. | 218 |
| The Texas Company | 323 |
| Texhoma Oil & Refg. Co. | 322 |
| Tidal Oil Co. | 161 |
| Miscellaneous | 4,737 |
| Total | 8,532 |
| **Stephens** | |
| Arkansas Fuel Oil Co. | 25 |
| Empire Gas & Fuel Co. | 25 |
| Gulf Prod. Co. | 1,078 |
| Humble Oil & Refg. Co. | 590 |
| Magnolia Pet. Co. | 345 |
| Mid-Kansas Oil & Gas Co. | 1,596 |
| Phillips Pet. Co. | 375 |
| Prairie Oil & Gas Co. | 760 |
| Republic Prod. Co. | 135 |
| Roxana Pet. Corp. | 45 |
| Simms Oil Co. | 30 |
| Sinclair Oil & Gas Co. | 70 |
| Sun Oil Co. | 160 |
| The Texas Company | 920 |
| Texas Pacific Coal & Oil Co. | 1,100 |
| Miscellaneous | 4,137 |
| Total | 11,391 |
| **Shackelford** | |
| Amerada Pet. Corp. | 3 |
| Empire Gas & Fuel Co. | 15 |
| Humble Oil & Refg. Co. | 1,480 |
| Independent Oil & Gas Co. | 8 |
| Magnolia Pet. Co. | 60 |
| Phillips Pet. Co. | 580 |
| Prairie Oil & Gas Co. | 10 |
| The Texas Company | 170 |
| Texhoma Oil & Refg. Co. | 65 |
| Miscellaneous | 8,540 |
| Total | 10,931 |
| **Ranger** | |
| Arkansas Fuel Oil Co. | 5 |
| Gulf Prod. Co. | 522 |
| Humble Oil & Refg. Co. | 40 |
| Magnolia Pet. Co. | 550 |
| Mid-Kansas Oil & Gas Co. | 105 |
| Panhandle Refg. Co. | 115 |
| Phillips Pet. Co. | 15 |
| Prairie Oil & Gas Co. | 540 |
| Republic Prod. Co. | 40 |
| Simms Oil Co. | 20 |
| Sinclair Oil & Gas Co. | 270 |
| The Texas Company | 140 |
| Texas Pacific Coal & Oil Co. | 780 |
| Miscellaneous | 2,430 |
| Total | 5,572 |
| **Eastland-Comanche** | |
| Empire Gas & Fuel Co. | 5 |
| Humble Oil & Refg. Co. | 90 |
| Magnolia Pet. Co. | 550 |
| Mid-Kansas Oil & Gas Co. | 135 |
| Phillips Pet. Co. | 35 |
| Prairie Oil & Gas Co. | 85 |
| Sinclair Oil & Gas Co. | 20 |
| Skelly Oil Co. | 125 |
| The Texas Company | 100 |
| Miscellaneous | 470 |
| Total | 1,615 |
| **Brown** | |
| J. S. Cosden Co. | 615 |
| Humble Oil & Refg. Co. | 3,695 |
| Phillips Pet. Co. | 170 |
| Prairie Oil & Gas Co. | 595 |
| Simms Oil Co. | 20 |
| The Texas Company | 560 |
| Witherspoon Oil Co. | 20 |
| Miscellaneous | 5,911 |
| Total | 11,586 |
| **Callahan** | |
| Amerada Pet. Corp. | 70 |
| Humble Oil & Refg. Co. | 3 |
| Prairie Oil & Gas Co. | 825 |
| The Texas Company | 105 |
| Texas Pacific Coal & Oil Co. | 20 |
| Miscellaneous | 3,480 |
| Total | 4,503 |
| **Miscellaneous Pools** | |
| Reagan County | 29,780 |
| Clay County | 659 |
| Montague County | 7,466 |
| Jack County | 230 |
| Throckmorton County | 1,455 |
| Baylor County | 130 |
| Palo Pinto County | 434 |
| Coleman County | 1,785 |
| Scurry County | 38 |
| Mitchell County | 3,577 |
| Crane County | 427 |
| Crockett County | 1,045 |
| Upton County | 6,989 |
| Howard County | 338 |
| Cooke County | 372 |
| Total | 54,726 |
| **Panhandle** | |
| Carson County | 4,219 |
| Hutchinson County | 112,515 |
| Wheeler County | 415 |
| Gray County | 4,253 |
| Potter County | 30 |
| Total | 121,432 |
| Grand Total | 367,872 |

### RED SEA-MEDITERRANEAN LINE

Deputy Chairman Sir John Cadman, of the Anglo-Persian Oil Co., is reported to have stated that the company is considering laying a pipeline between the Red Sea and the Mediterranean, to avoid bringing tankers through Suez Canal and thereby saving the heavy dues.

## SPINDLETOP DEEP SAND LIKELY TO MAKE RECORD

BEAUMONT, Tex., Sept. 24.—The deep sand section of the Spindletop Pool bids fair to exceed any other producing district in the United States in the amount of oil taken from a limited area. The experience of the Gulf Producion Co. there is a case in point. That company has eight acres on the southwest side, six of which have proved good. The company has 17 wells on the 6 acres. It drilled 20 but 3 were failures. The first well, No. 1 A Weed, came in June 29. Since that time the gross production of the company has been approximately 1,500,000 bbls. or about 250,000 bbls to the acre, coming from sands at 2,500 feet, 3,000, 3,500 and 4,244 feet, the latter a new deeper sand developed in No. 4-A Weed.

No. 4 Weed, which came in September 15 flowing 4,000 bbls. 27 gravity oil through a ¾-inch choke, has been making 3,500 bbls. through ½-inch choker. It was opened full for part of one day and flowed at the rate of 15,000 bbls. per day, but showed some water and choked down again. Old wells in the vicinity of No. 4-A Weed are being drilled deeper to the lower pay.

The nearest approach to the record being made at Spindletop is the Japhet 20 acres on the east side of the West Columbia Pool, opened by the Humble Oil & Refining Co. That lease yielded 12,000,000 bbls in eight years compared with the six acres at Spindletop in two and one half months. The famous Long Beach Field in California is credited with yielding 200,000 bbls. per acre covering a six-year period.

The Landslide and Stevenson tracts in the deep sand section of the Humble Pool were both prolific producers, but the acreage was much more extensive than either Spindletop or West Columbia. The Stevenson lease contains 525 acres divided into 25-acre tracts on which The Texas Company and the Farmers Petroleum Co. drilled on alternate tracts. The wells were spaced 250 feet distant, while at Spindletop the derricks almost touch, so close are the offsets.

The Gulf Production Co. is credited with a daily average of 41,000 bbls. per day from its 17 wells at Spindletop. The Yount Lee Oil Co. has 28 deep sand wells, its production being placed at 3,200 bbls. per day. The company opened the deep sands on the southeast and west and has several hundred acres proven up, largely on the southeast side where it will not be hampered with offsets.

### FELL FROM CROWN BLOCK

COTTONWOOD FALLS, Kans., Sept. 25.—John McDowell, Peabody, Kans., member of a casing crew on the wildcat well of the Mississippi Valley Oil Co., on the Mulvane land, 8 miles northwest of Cottonwood Falls, plunged headlong from the crown block, near the top of the 82-foot derrick, but was saved when his foot become entangled in a wire cable. McDowell was suspended in midair until his fellow workers could rescue him. His leg above the ankle was almost severed by the wire. Both bones were crushed and tendons cut. It was said his foot might have to be amputated.

### ENGLAND'S FUEL COMMITTEE

In accordance with the recommendations of the Royal Commission on the coal industry for the establishment of a National Fuel and Power Committee, the president of the British Board of Trade has appointed a standing committee to consider and advise upon questions connected with the economic use of fuels and their conversion into various forms of energy having regard to national industrial requirements in the light of technical developments.

## Crude and Refined Oil Stocks Continue Downward Movement

Pipeline and tank farm gross domestic crude oil stocks east of the Rocky Mountains decreased 194,000 bbls. in the month of August, according to returns compiled by the American Petroleum Institute from reports made to it by representative companies. The net change shown by the reporting companies accounts for the increases and decreases in general crude oil stocks, including crude oil in transit but not producers' stocks.

The following is the American Petroleum Institute's summary for the month of August of the increases and decreases in stocks at refineries covering approximately 83 per cent of the operating capacity east of California. (In barrels of 42 gallons.)

| | Increase | Decrease |
|---|---|---|
| Domestic crude oil | 727,000 | ..... |
| Foreign crude oil | ..... | 288,000 |
| Gasoline | ..... | 2,359,000 |
| Kerosene | 72,000 | ..... |
| Gas and fuel oil | 1,122,000 | ..... |
| Lubricating | 70,000 | ..... |
| Miscellaneous | ..... | 111,000 |
| Total | 1,991,000 | 2,758,000 |
| Deduct | ..... | 1,991,000 |
| Net decrease | ..... | 767,000 |

## CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California oil (crude and refined) at Atlantic and Gulf Coast ports for the week ended September 18, totaled 606,000 bbls., a daily average of 86,571 bbls., against 568,000 bbls., a daily average of 81,143 bbls. for the week ended September 11, and a daily average of 83,179 bbls. for the four weeks ended September 18, says the American Petroleum Institute.

**California Oil Receipts**
(Barrels of 42 gallons)

| | Week Ended Sept. 18 | Week Ended Sept. 11 |
|---|---|---|
| At Atlantic Coast Ports— | | |
| Baltimore | 124,000 | 191,000 |
| New York | 337,000 | 304,000 |
| Philadelphia | 145,000 | 73,000 |
| Others | ..... | ..... |
| Total | 606,000 | 568,000 |
| Daily average | 86,571 | 81,143 |
| Total Atlantic and Gulf Coast Ports | 606,000 | 568,000 |
| Daily average | 86,571 | 81,143 |
| Daily average Four Weeks Ended | 83,179 | 89,750 |
| Distribution of total California Oil Receipts is as follows: | | |
| Crude | 80,000 | 75,000 |
| Gasoline | 154,000 | ..... |
| Gas Oil | 138,000 | 73,000 |
| Fuel Oil | 234,000 | 420,000 |
| Total | 606,000 | 568,000 |

Imports of petroleum (crude and refined oils) at the principal United States ports for the week ended September 18, totaled 859,000 bbls., a daily average of 122,714 bbls., compared with 1,219,000 bbls., a daily average of 174,142 bbls. for the week ended September 11, and a daily average of 168,107 bbls. for the four weeks ended September 18.

**Imports of Petroleum**
(Barrels of 42 gallons)

| | Week Ended Sept. 18 | Week Ended Sept. 11 |
|---|---|---|
| At Atlantic Coast Ports— | | |
| Baltimore | ..... | 75,000 |
| New York | 533,000 | 599,000 |
| Others | ..... | 184,000 |
| Total | 533,000 | 858,000 |
| Daily average | 76,143 | 122,571 |
| At Gulf Coast Ports— | | |
| Galveston Dist. | 58,000 | 58,000 |
| New Orleans and Baton Rouge | 268,000 | 303,000 |
| Port Arthur and | ..... | ..... |
| Total | 326,000 | 361,000 |
| Daily average | 46,571 | 51,571 |
| At All United States Ports— | | |
| Total | 859,000 | 1,219,000 |
| Daily average | 122,714 | 174,142 |
| Daily Average Four Weeks Ended | 168,107 | 178,892 |

### CANADIANS IN MID-CONTINENT

CHATHAM, Ont., Sept. 25.—Hon. Alex Ross, minister of public works, and Hon. J. F. Lymburn, attorney general for the province of Alberta, left recently for Oklahoma and Texas where they will investigate the oil situation, with a view to preparing legislation governing oil development in Alberta.

## CRUDE OIL PRICES

(Continued from Page 123)

Co. †Posted by the Gulf Pipe Line Co. §Posted by the Louisiana Oil Refining Corp.

**ROCKY MOUNTAIN STATES**

**Ohio Oil Co.—Midwest Refining Co.**
(Effective May 17)

| | |
|---|---|
| Rock Creek (Wyo.) | $2.25 |
| Salt Creek— | |
| 29° to 29.9° | 1.73 |
| 30° to 30.9° | 1.81 |
| 31° to 31.9° | 1.89 |
| 32° to 32.9° | 1.97 |
| 33° to 33.9° | 2.05 |
| 34° to 34.9° | 2.13 |
| 35° to 35.9° | 2.21 |
| 36° to 36.9° | 2.29 |
| 37° and above | 2.37 |
| Big Muddy | 2.25 |
| Mule Creek | 1.75 |
| Grass Creek, light | 2.40 |
| Grass Creek, heavy | .90 |
| Elk Basin | 2.40 |
| Lance Creek | 2.40 |
| Rex Lake | 1.45 |
| Osage | 2.40 |
| Lost Soldier (Contract) | 1.35 |
| Greybull-Torchlight | 2.15 |
| Hamilton Dome | 1.35 |
| Cat Creek (Mont.) | 2.40 |
| Sunburst, (Mont.) (Sept. 14) | 1.25 |
| Florence (Colo.) | 1.60 |
| Artesia | 1.95 |
| Hogback (N. Mex.) | 2.45 |

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

**EASTERN STATES**

**Joseph Seep Purchasing Agency**
(Effective March 8)

| | |
|---|---|
| Penna Grade Oil in New York Transit Lines (New York) | $3.40 |
| Bradford District Oil in National Transit Lines (Pennsylvania) | 3.40 |
| Penna Grade Oil in National Transit Lines (Pa.) | 3.30 |
| Penna Grade Oil in Southwest Pa. Lines (West Virginia) | 3.30 |
| Penna Grade Oil in Eureka Pipe Line Lines (Pa.) | 3.25 |
| Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) | 3.05 |
| Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 17) | 2.40 |
| Corning Grade Oil in Buckeye Pipe Line Lines (Ohio) (May 22) | 2.55 |
| Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky) (May 17) | 2.50 |
| Somerset Light Oil in Cumberland Pipe Lines (Kentucky) (May 17) | 2.65 |
| Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (May 19) | 1.25 |
| Gaines (Pennsylvania) (Apr. 27) | 2.85 |
| Keister (Pennsylvania) (Feb. 15) | 2.30 |

**MIDDLE WESTERN STATES**

**Ohio Oil Co.**
(Effective May 17)

| | |
|---|---|
| Lima | $2.48 |
| Wooster | 2.55 |
| Illinois | 2.37 |
| Indiana | 2.25 |
| Princeton | 2.37 |
| Plymouth | 1.90 |
| Waterloo | 1.35 |
| *Western Kentucky (Sept. 8) | 2.10 |
| †Cumberland, Barren and Monroe Counties, Ky., (May 17) | 2.65 |
| **Oil in lines of Stoll Oil Refg. Co. in Oil City, Ky. | 2.65 |
| **Oil in lines of Stoll Refg. Co. in Tinsley Bottom, Tenn. | 2.46 |
| §Oil Springs (Canada) (May 18) | 2.95 |
| §Petrolia (Canada) (May 18) | 2.88 |

**Posted by Stoll Oil Refg. Co.
*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
§Posted by Imperial Oil Co., Ltd.

**MEXICO**
(Effective May 13)

| | |
|---|---|
| *Tuxpam light (f.o.b. Mex. ports) | $1.35 |
| §Panuco heavy (f.o.b. Mex. ports) | 1.15 |
| Tuxpam (New York) | 2.15 |
| Panuco (New York) | 1.80 |

*Plus 32.328c tax. §17.631c tax.


UNION TANK CAR COMPANY
21 EAST 40TH STREET, NEW YORK

THE EXECUTIVE AND GENERAL OFFICES OF THE UNION TANK CAR COMPANY WILL BE MOVED TO CHICAGO, ILL., SEPTEMBER 16, 1926. ADDRESS:

UNION TANK CAR COMPANY
(METROPOLITAN BUILDING)
134 NORTH LA SALLE STREET
CHICAGO, ILLINOIS

ALL COMMUNICATIONS TO THIS COMPANY, WHICH ORDINARILY WOULD BE DELIVERED ON SEPTEMBER 16, AND THEREAFTER, SHOULD BE SENT TO THE CHICAGO ADDRESS.

E. L. GRIDLEY, SECRETARY



FOR SALE

1—125 horsepower Bessemer Gas Engine, 180 r.p.m., with Standard clutch, complete, ready to put into service.

ALSO

1—110 horsepower Bessemer Gas Engine, 180 r.p.m., with Standard clutch and equipment.

Especially suitable for oil or gas pumping operations.

Engines are in good condition. Only reason for disposal, substitution of electric drive.

Address inquiries to

SOUTH HILLS ICE COMPANY
South Hills Station
Pittsburgh, Pa.


## RAINS CAUSE GLOOMY GASOLINE MARKET

(Continued from Page 24)

test material with a good flash on northern markets at 4 cents, which was below the Group 3 market.

Another factor also is entering the picture with a reduction in freight rates on this product and fuel oil from Montana refiners to several states in the Standard Oil Co. of Indiana territory. While the production of gas oil and fuel oil in Montana is not large, the fact that Montana gas oil can be put into the Chicago district nearly as low as Group 3 material throws some light on the possibilities of competition from that state.

Good Montana gas oil was being offered freely at Chicago Monday and Tuesday on a basis of 4 cents Group 3 so this, with the Louisiana material, resulted in an extremely soft tone to the Oklahoma situation.

**Gasoline and Naphtha**

A few Louisiana and Arkansas refiners also were offering some cheap gasoline which was having a bearish effect on the Oklahoma market. Several quotations as low as 10 cents on the U. S. Motor (58-60 437) gasoline were reported. The Group 3 market on this product was quoted at 10¼ to 10½ cents, but there was very little business at this figure and concessions were reported. A few purchases of this material at 10 cents out of the group were reported, but this price was not a general quotation Tuesday.

As previously mentioned, the reduction in export prices caused a very unsettled condition, especially in the higher gravity gasolines, and again the margins between the various grades of gasolines became very close. However, the 60-62 400 end-point material was not offered to any extent below 10¾ to 11 cents, and the 64-66 375 at 11 to 11¼ cents on the spot market, although the new net contract price on the latter product in Oklahoma was only 10.55 cents. Some 375 gasoline was offered out of Texas on a basis of 10⅞ cents Group 3, but there is not a great deal of material available in Oklahoma.

It is admitted that these new low prices on gasoline are cramping refiners on present high crude prices, and there is considerable speculation as to whether the market can be forced much lower without refiners cutting operations materially or without a revision in the crude structure. A tankwagon reduction in the Standard Oil Co. of Indiana territory also is expected at any time.

**Natural Gasoline**

The dull refinery gasoline market also resulted in a very slack demand for natural gasolines, and these products were being offered Tuesday at prices much lower than a week ago. One large seller quoted Grade A freely at 9¾ cents Monday and Tuesday, and the B grades were available at 9¾ to 9½ cents, and Grade C at 9⅛ to 9¼ cents.

**Kerosene and Distillates**

There is no change in the general kerosene situation, and prices continued to drop sharply, with 41-43 water white material being obtainable Tuesday at 7¾ cents. The demand for distillates was only fair, although these products still were firm and no efforts were made to shade prices. There is an excellent demand for furnace oils in northern states, according to reports from Chicago jobbers, which lends strength to the distillate picture.

**Fuel Oil and Gas Oil**

All grades of fuel oil and gas oil were weaker Tuesday than a week ago, with a marked falling off in demand. The gas oil situation has been explained as due both to a decline in demand and also to competition from other refining centers. Good Oklahoma gas oil was plentiful at 4¼ cents, and fuel oil prices were from 2½ to 5 cents lower. Low grades were quoted Tuesday from $1.27½ to $1.32½, the 22-26 grade at $1.35, 24-28 at $1.37½ to $1.40, 26-30 at $1.45 to $1.50, and 28-30 at $1.57½ to $1.60.

**Lubricants and Wax**

Most grades of lubricating oil stocks continued steady in price, although there was a gradual slackening in demand, due both to the season and to the weather. Wax continued inactive.

## USE OF NATURAL GAS DECREASED DURING 1925

According to reports received by the Bureau of Mines from natural gas producers and distributors, the consumption of natural gas in the United States during 1925 was 1,188,439,000,000 feet. Of this total, 272,146,000,000 feet, or 23 per cent, was used in homes by 3,536,000 domestic consumers. This represents a decrease in domestic consumption from 1924 of nearly 5 per cent, but an increase in number of consumers of 92,600, or nearly 3 per cent. California was the only State to report a material decrease in number of domestic consumers. This decrease in total consumption, in the face of a greater number of users, is indicative either of better utilization of the gas available or of its displacement by other fuels as the result of higher prices. The average price paid by domestic consumers of natural gas was 56.0 cents per thousand feet, compared to 54.0 cents in 1924.

The relative rank of the principal gas-producing states was unchanged in 1925. Oklahoma, which ranks first, registered a 16 per cent gain in production; and Texas, the fifth in importance, a 26 per cent gain. California, West Virginia and Louisiana, which rank second, third and fourth, respectively, had slight declines in output.

Interstate transportation of natural gas, which is carried on mainly for domestic consumption, increased in 1925. The major interstate movement continued to be from West Virginia to Ohio.

Consumption of natural gas for industrial purposes amounted to 916,293,000,000 feet, an increase over 1925 of 7 per cent. Of this total, 46 per cent was used for field purposes, that is, for drilling, pumping, etc.; 15 per cent in the manufacture of carbon black; and the remainder in other industries.

## WEST VIRGINIA OIL AND GAS MEN MEET

PARKERSBURG, W. Va., Sept. 28.—Members of the West Virginia Oil and Gas Men's Association convened in this city today for their annual meeting.

The meeting was one of the most interesting in recent years, due largely to the fight made by the Hope Gas Co. to declare West Virginia's gross sales tax unconstitutional.

The meetings opened in the Camden Theater at 1 p. m. and a banquet will be given at the Masonic Temple this evening.

Among the speakers are Henry G. Wells of Boston, of the Massachusetts Public Utilities Commission. His subject will be "The Relation of the Public Utility to the Public Served." His talk will bear on the oil and gas business in particular.

Edwin C. Robinson of the state association is another prominent speaker. Mr. Robinson has been very active in working for an improved status for the oil and gas business in West Virginia.

Officers of the association are: James H. Dye, Charleston, president, manager of the Pure Oil Co.; John P. Flynn, Sistersville, vice president, president of the Reno Gas Co.; Edwin C. Robinson, of Fairmont, secretary and treasurer.

### DEATH OF CHARLES DAY

Charles Day, director of the Tidal Oil Co.'s production department since 1918, died last week at Canadian, Tex., where he had been operated upon for appendicitis. He had spent some time in the Amarillo Field, and was returning to his home in Tulsa when stricken.

# What Pump? We Nominate Transit

WHEN a chap has a real knotty problem in moving fluid, he's inclined to feel that he is a sort of pioneer. He knows in his bones that no other man ever had such a devil of a time.

As a matter of fact, the men who design and make Transit Pumps have probably been working away for a quarter of a century—or even much longer—at that very same problem, refining, progressing, improving.

There are Transit Pumps which will do with utmost efficiency the very things that most men go through with travail of spirit and gnashing of teeth.

If you are faced with the necessity for putting a larger volume through a pipe line that's already too small, or if you haven't been able to get a pump that will handle red hot tar at the refinery, or if anything else in the world worries you which savors of fluid and how to get it from where it is to where it isn't, call on the Frick-Reid Store in your field, or write our Tulsa office. There are also Transit Pumps for ordinary duties, which show their efficiency by long life and faithful service.

*West of the Mississippi, Stores Everywhere*
*East of the Mississippi, The Frick & Lindsay Company*

# FRICK-REID SUPPLY Co

**TULSA, OKLA.--- PITTSBURGH, PA.**

*In Oil Field Equipment—the most HUMAN organization in America*

# What Happens to Lub Oil in Engine

## Dirt and Dilution Soon Change Character of All Lubricating Oils. Presence of Sulphur in Fuel Supply Important

By W. G. Wall*

A close study of the properties of lubricating oils and the treatment they receive in the average motor car rather leads us to the conclusion that a gasoline automobile engine is no place for a self-respecting oil. We put fine new oil into the engine, do about all the things to it that we should not do and still expect it to lubricate all the parts properly.

We begin by letting road dust into the cylinders of the engine through the carburetor, and it gradually works its way past the pistons into the crankcase. Some also gets in through the breather-pipes, producing a very good grinding compound. We allow gasoline to mix with the oil, also water, some of which comes from combustion and, in cold weather, from condensation within the crankcase; and all this time we are subjecting part of the oil to a high temperature and mixing carbon with it, so that after a short time the original oil is hard to recognize.

Some of us have been doing what we could to remedy this condition and, although we have gone at it in different ways, we all have had the same end in view. Some have worked on the theory that, if the dirt is kept out, or if the dirt that is in the oil is strained out, the thin oil, due to dilution, will not be harmful. Others have worked on the theory that, if the gasoline and water are kept out and the viscosity of the oil is kept up fairly well, the dirt will not do much harm on account of the thick oil film between the moving parts.

### Effect of Dirt and Dilution

I believe that it is necessary to work along both these lines and either keep out or get rid of both the dirt and the dilution. Few engineers appreciate the enormous amount of dirt that gets into the engine or the amount of dilution that gets by the pistons, or the great amount of water in the crankcase. This water not only dilutes the oil but also forms sulphuric acid, rusting the parts and in winter probably freezing at the oil pump, besides being instrumental in forming sludge.

Ordinarily, oil and water will not mix but, with the agitation due to the churning of the crankshaft and the movement of the pistons, they form an emulsion. When an emulsion is mixed with road dust or carbon particles, it gradually forms what is called sludge. If this stayed in the bottom of the crankcase and were not agitated in any way or pumped through the oil lines, it would not do much damage but, as it is sucked into the oil pump and from the pump probably into the crankshaft, it has a tendency to clog the oil holes and rapidly wear the bearings. Any strainer that takes out the dirt helps to alleviate these faults; but, to eliminate the sludge entirely, it is necessary to get rid of all the water in the crankcase.

Oils used in an engine soon become oxidized and black in color, due to the fact that they are exposed to very high temperatures on the cylinder walls. These temperatures often reach 2,500 degrees Fahrenheit. The oil also becomes oxidized by being heated to a high temperature, due to contact with the under side of the piston heads.

### Sulphur

Sulphur in the fuel, especially fuel containing benzol, often causes trouble. The sulphur probably forms dioxide and, by mixing with water in the crankcase, becomes sulphurous acid.

Emulsification and saponification are often confused. The former is a mechanical mixture of water and oil; the latter is a chemical combination of oil and water in the presence of an alkali.

I believe that a small amount of dilution in the crankcase, when no water is present, does no harm; in fact, in cold weather as much as 4 or 5 per cent of diluent is possibly beneficial, but more than 10 per cent is certainly detrimental. The purpose in using this rectifier has been to take out all the water and to keep the diluent between 4 and 5 per cent and the viscosity above 250 seconds at 100 degrees Fahrenheit.

In cold weather, very few engines, when operated without a rectifier, show less than 25 per cent dilution; they also show considerable water. A large number show from 40 to 50 per cent dilution and a viscosity as low as 80 seconds after a few hundred miles' run.

In fact, I have just received an analysis of some oil taken from a well-known car that had been run 480 miles. It showed 28 per cent of diluent, which is fairly low during March, and 4¾ per cent of water, but the viscosity was down to 54 seconds.

### Operation of Rectifier

In a rectifier the oil is forced to it by pressure of the oil pump at the rate of about 3 gallons per hour, somewhat slower when the engine is running at low speed and faster at high speed. That is, the oil in an average size crankcase is filtered and goes through the distilling apparatus about once every hour. The temperature of the oil in the distillation chamber will vary somewhat with the heat of the exhaust and with the speed of the engine and ranges from 180 to slightly less than 275 degrees Fahrenheit.

The question is often asked: How can you get all the gasoline out of the oil without heating it to a high temperature, when the endpoint of the gasoline used at present is 450 degrees Fahrenheit, or even higher? This is best answered by referring to one of Dalton's laws, which is, that when exposed to normal atmospheric pressure, any liquid, by reason of its vapor pressure, will give off vapor. As an illustration of this fact, a pan of water will gradually evaporate in a warm room, the atmosphere of which is not already saturated, yet to boil the water requires a temperature of 212 degrees Fahrenheit. At the boiling point the vapor pressure is equal to the atmospheric pressure. You will often note vapor coming out of a radiator when the filler cap is open, although the temperature of the water is not more than 180 degrees Fahrenheit. So, it is possible to remove practically all the gasoline diluent at a somewhat lower temperature than would be supposed to be possible. This means that the time element is a large factor in eliminating the dilution. A lower temperature for a longer time will accomplish nearly the same result as a high temperature for a shorter time. Temperatures of the oil lower than 180 degrees Fahrenheit, however, seem to have very little effect at atmospheric pressure.

### Cracking of Lubricating Oil

Another question: Will not the lubricating oil crack and be converted into gasoline, thus eliminating part of the oil? This is possible but will seldom if ever happen, for a temperature of at least 650 degrees Fahrenheit at atmospheric pressure is required to crack oil into gasoline, and there is not much danger of the oil ever reaching so high a temperature. Oil is a very poor conductor of heat, so that, in order that the oil may reach a certain temperature, the container must be considerably hotter.

The specific gravity is not a dependable indication of the amount of diluent in oil. This is quite obvious, as oil diluted with 20 per cent of kerosene will not have the same specific gravity that it would have if diluted with 20 per cent of light gasoline.

With this type of rectifier, in which the exhaust gases are in a jacket surrounding the distillation chamber, there is very little difference between the temperatures in winter and in summer. The difference in temperature when the engine is running at slow speed and at high speed is much greater and, in this case, is partly compensated for by the faster oil flow through the distillation chamber as the speed of the engine and the suction from the carburetor increase.

### Requirements of Commercial Rectifier

A good commercial rectifier should accomplish the following things:

(1) Strain the dirt out of the lubricating oil, keeping it fairly clean.
(2) Distil off the diluent.
(3) Distil off the water.
(4) Maintain the viscosity.
(5) Eliminate the necessity for draining the crankcase so often.
(6) Increase the oil mileage materially.
(7) Increase the gasoline mileage as a result of using the gasoline distilled off.
(8) Prevent a large part of the wear on cylinder walls and bearings by maintaining the viscosity of the oil and straining out the dirt.
(9) Permit the use of lighter grades of oil the year round.
(10) Prevent the freezing of the oil pump in cold weather.
(11) Keep the pistons sealed and increase the compression and power; also help to prevent fouling of the spark plugs.
(12) Prevent rusting and the forming of sulphurous acid and sludge, by eliminating the water. This also prevents etching due to the acid.

Of the rectifiers on the market, some accomplish all these things to a certain extent; others accomplish some of them extremely well. Let us hope that some day we shall see a rectifier that will accomplish all these things perfectly.

*Consulting engineer, Indianapolis. Part of paper presented at meeting of Society of Automotive Engineers.

### OIL RECTIFIER

Manufacturers and distributors of lubricating oils have recently become very much interested in the oil rectifier developed by the automotive engineers to reduce lubricating oil costs in the operation of automobiles and other internal combustion engines.

In the accompanying paper presented at a meeting of the Society of Automotive Engineers, the writer discusses the problem of lubrication and the place of the rectifiers in engine operation. Following the presentation of several papers on the subject of the rectifiers and the general problem of lubrication a discussion took place, part of which is given here.

# Discussion at S.A.E. Meeting

Chairman G. T. Briggs[1]—What do you think of the proposition of R. E. Wilson, who says that the Standard Oil Co. will soon market a prediluted oil?

Mr. Wall—Mr. Wilson's hypothesis is based on the fact that, when oil is put into a crankcase and run in an engine, the dilution will finally reach a certain equilibrium; in other words, when the dilution reaches a certain percentage, the heat of the crankcase will maintain the oil at that point of dilution. I think the idea would be fine were not his hypothesis entirely wrong. If it were right, his oil proposition would be very good; but I have found out that, although there may be such a thing as equilibrium of the dilution in a crankcase in warm weather, when the crankcase gets fairly warm and the whole engine is rather hot, the longer an engine runs without a rectifier in cold weather, especially in short runs of from 4 to 6 miles, between which it stops and cools off, the more will the dilution increase. The curve, instead of reaching a point at which it is perfectly horizontal, shows that the dilution will increase and will continue to increase as long as the engine runs, that is, until a point is reached at which the dilution is so extremely high that it would make little difference to the parts lubricated whether it went higher or not.

A Member—What is the maximum temperature of the oil in warm weather and hard driving?

R. L. Skinner[2]—Under actual operating conditions, even with the thermostat operating, we have found that the heat of the oil reaches 240 or 250 degrees Fahrenheit, due to heat radiation from the top of the rectifier in the center of the unit, where the oil passes over. Under dynamometer conditions, where no allowance is made for heat radiation on the bottom of the rectifier, the temperature of the oil reaches about 400 degrees Fahrenheit.

A Member—What is the maximum temperature?

Mr. Skinner—Four hundred degrees Fahrenheit on a dynamometer and about 240 degrees Fahrenheit on the road are the hottest conditions we have experienced.

### Carbon in Crankcase Oil

A Member—You speak of carbon in the crankcase oil. What do you mean by that, and what is the source of this carbonaceous substance?

Mr. Skinner—It comes primarily from the oil's splashing up on the inner side of the piston and burning.

A Member—What importance do you attach to pour tests?

Mr. Skinner—Their importance concerns the circulation of oil at a low temperature, particularly in zero weather.

A Member—If two cups of oil, one that will flow at zero and one that is solid, are stirred there will be less resistance in oil that is solid than in oil that will run, owing to the very delicate set of the oil that seems to be solid. Do you know that to be a fact?

Mr. Skinner—No; but I know that solid oil will not flow into the pump.

A Member—In an engine test some time ago at Purdue University, we used an oil rectifier that operated uner a wide-open throttle. We found that at the end of one-half hour the top of the rectifier was burned out. We made the test again with another rectifier, and the same thing happened twice. We would like to find out whether that was caused by our meth-

(Continued on Page 145)

[1]A. S. A. E.—General sales manager, Wheeler-Schebler Carburetor Co., Inc., Indianapolis.
[2]President and general manager, Skinner Automotive Device Co., Inc., Detroit.

It is mentioned that this amount will be necessary IF all the wells drilling are completed; for there is the very well-founded belief that many of the rigs now standing will be torn down and only a Garland drilling. A time of 56 days for completing wells to a depth of 4,100 feet is a very good operating performance.

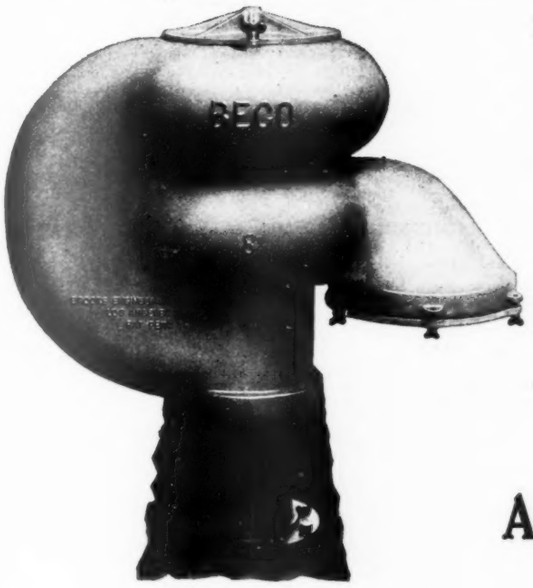
There has been a water shortage in the Seminole Pool, and a few companies distillation of Mitchell County, Texas, crude oil.

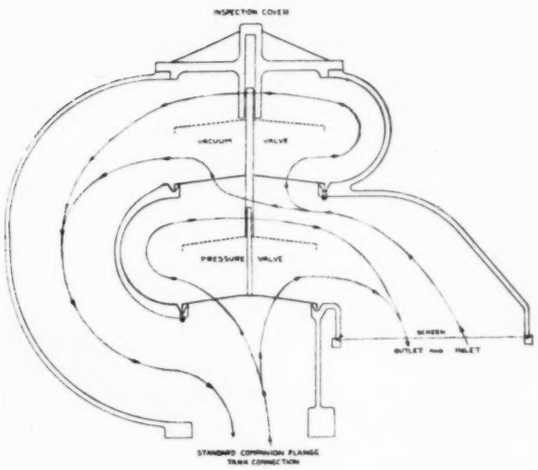
(14) Gasoline made by the natural distillation of Southern California crude oil.

(15) Gasoline made by cracking South-

At 1,470 feet. Section 19, Block 44. Cadman and others' No. 1 J. T. Sneed, Jr., underreaming 1,900 feet, Section 68, Block 3. Douglas Oil Co's No. 1 Beauchamp, fishing 280 feet, Section 112,

# BECO

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1 Coby, shut down at 2660 feet. Section 88, Block 17; No. 1 Martin, drilling at 225 feet, Section 89, Block 17; No. 1 Alexander, rigging up tools, Section 92, Block 17; No. 1 Griswald, rig, Section

& Simons No. 3 Maddox pumped ... bbls. at 835-48 feet. Humble Oil & Refining Co.'s No. 4 Maddox was plugged back from 900 feet to sand at 874-79 feet and made 30 bbls. Olean Petroleum

wise was dry and plugged at ... Simms Oil Co.'s No. 1 Chilson pumped 175 bbls. at 1,150-54 feet and 1,168-82 feet; No. 2 Chilson swabbed 149 bbls. at

and 1,... found at 2,315 feet, first pay at 2,240 feet. Humble Oil & Refining Co.'s ... 2 A. S. Burleson pumped 141 bbls. from

2,161-85 feet. Marland Oil Co.'s No. 13 Sanger pumped 105 bbls. after a 160-quart shot at 2,188-2,260 feet; No. 2-A Burleson pumped 10 bbls. at 2,250 feet; No. 3-A swabbed 35 bbl. before a shot of 60 quarts at 2,141-58 feet, pay being at 2,125-95 feet; No. 21 Burleson made 50 bbls. after a shot of 60 quarts at 2,170-85 feet. It was plugged back from 2,240 to 2,220 feet; No. 22 Burleson pumped 90 bbls. at 2,105-2,240 feet; No. 23 swabbed 200 bbls. at 2,120-50 feet; No. 24 pumped 100 bbls. after a 240-quart shot at 2,125-73 feet, pay having been at 2,120-73 feet.

Republic Production Co.'s No. 4 Baker swabbed 40 bbls. at 2,215-32 feet. Roxana Petroleum Corp.'s No. 2 Della Bowen pumped 172 bbls. at 2,116-2,215 feet. Sun Oil Co.'s No. 4 Burleson pumped 85 bbls. at 2,085-2,129 feet; No. 5 pumped 75 bbls. at 2,067-2,131 feet. The Texas Company's No. 1 H. King pumped 20 bbls. of oil and 20 bbls. of water after a 60-quart shot at 2,033-43 feet, with pay at 2,005-2,177 feet. Texas Pacific Coal & Oil Co.'s No. 1 Milton Shirk pumped 103 bbls. at 2,163-85 feet.

## WEST TEXAS WILDCATS

### Andrews County

Amon G. Carter & Zweifel's No. 1 Cowden, moving in material, C SE, Section 18, Block A-52, Public school land. H. Zweifel and others' No. 1 Means, location, C SE, Section 8, Block 35, Public school land. Maer & Staniforth's No. 1 W. S. Taylor, location, C SE, Section 15, Block A-42, Public school land.

### Brewster County

J. Rosenborough & Skinner's No. 1 Skinner, fishing casing at 1,055 feet.

### Coke County

Lipan Oil Co.'s No. 1 E. C. Rawlings, shut down at 2,640 feet.

### Concho County

The Exploration Co.'s No. 1 Hartgrove, drilling at 610 feet; Kemper, Kimberlin and others' No. 1 Schultz, cleaning out at 1,520 feet, NE NE, Section 139, Block 72, T. & N. O. Survey. Culbertson Brothers' No. 1 W. S. See, drilling at 875 feet. Gene Mays and others' No. 1 Hartgrove, drilling at 925 feet, NW SW, Section 312.

### Crane County

Cranfill Brothers' No. 1 P. J. Lea, shut down for orders at 3,505 feet. Duffy Brothers and others' No. 1 Cowden Brothers, drilling at 450 feet, Section 65, Block X; No. 1 Griffith, location, SE SE, Section 16, Block X. Gulf Production Co.'s No. 1 Crier-McIlroy, shut down for storage, C SE SW, Section 198, Block F; No. 2 Crier-McIlroy, shut down temporarily, NW SW, Section 198, Block F, same survey; No. 3 Crier-McIlroy, shut down temporarily, C SE NE, Section 198, Block F, same survey; No. 2 T. J. McIlroy, fishing two string tools at 2,165 feet, NE SE, Section 203, Block F, same survey; No. 3, shut down for storage, SE NE, Section 203, Block F, same survey; No. 1 State-Z. T. Lasseter, skidded rig 25 feet north and spudded new hole, SW SW, Section 35, Block 30, University. Independent Oil & Gas Co.'s No. 1 E. S. Hughes, top salt at 653 feet, drilling at 2,230 feet; No. 2 Taylor, location, Section 6, H. T. Sapp Survey; No. 3 Taylor rigged up and shut down; No. 5 Taylor, top salt 442 feet, drilling at 1,140 feet, Section 6, H. T. Sapp Survey; No. 7 Taylor, fishing at 2,575 feet for tools; No. 8 Taylor, shut down at 2,355 feet; No. 9 Taylor, drilling at 225 feet; No. 10 Taylor, rig. Magnolia Petroleum Co.'s No. 2 University Church, swabbing 100 bbls. at 3,001-27 feet, SE SE, Section 34, Block 30, University; No. 1 State-Lasseter, location; No. 2 O'Keefe, spudding, Section 38, Block 30, University. Marland Oil Co.'s No. 1 Mary Dawson, rigging up, NE cor. Section 84, Block X; No. 2-C E. S. Hughes, drilling, NW NE NE, Section 86, Block X, C. C. S. D. & R. G. N. G. Survey; No. 3-C E. S. Hughes, top salt 640 feet, drilling at 1,170 feet, SE NE NE, Section 86, Block X, C. C. S. D. & R. G. N. G. Survey; No. 1-D E. S. Hughes, flowing 62 bbls. per hour, at 2,320-40 feet, SW cor. Section 88, Block X, C. C. S. D. & R. G. N. G. Survey. Prairie Oil & Gas Co.'s No. 1 University, rigging up; No. 2, rig. The Texas Company's No. 5 H. M. King, location, SW SW, Section 85, Block X; No. 6, total depth 2,331 feet, top 2,301 feet, 800 feet of oil in the hole; No. 7 top salt at 645 feet, drilling at 1,915 feet, SE SW SE, Section 85, Block X, same survey. Texas Development Co.'s No. 1 Cowden, shut down at 3,820 feet. Zweifel and others' No. 1 Cowden, location.

### Crockett County

Archer Oil Co.'s No. 1 Couch, location C NE, Section 18, Block Q-R, D. & S. E. Survey. Cumberland Oil & Gas Co.'s No. 1 Couch, shut down at 1,835 feet. Gulf Production Co.'s No. 1-D L. P. Powell, drilling at 1,425 feet, Section 62, Block B-B, G. C. & S. F. Survey. Humble Oil & Refining Co.'s No. 1-B Powell, spudded 275 feet, Section 63, Block B-B, E. L. & R. Survey. J. K. Hughes Development Co.'s No. 2-A Powell, drilling at 725 feet, Section 2, Block BB-2, G. C. & S. F. Survey; No. 3-A, straightening hole at 2,125 feet, Section 2, Block BB-2, N. A. Miller Survey; No. 2-B, top salt 1,155 feet, drilling at 1,200 feet, Section 63, E. L. & R. R. Survey. Republic Production Co.'s No. 1 L. P. Powell, top salt at 1,125 feet, drilling at 2,135 feet, Section 62, Block BB, E. L. R. R. Survey. William Schaffer and others' No. 1 University, shut down at 2,191 feet, C SE SE, Section 9, Block 47, University. Ben Simon and others' No. 1 Shannon, hole full of water at 2,518 feet, drilling at 2,610 feet, C SW, Section 10, Block Y-Z, E. L. R. R. Survey. J. D. Young & Cromwell's No. 1 R. Massie, show of oil at 2,109 feet, but preparing to plug at 2,200 feet; No. 1 Shannon, drilling at 365 feet, SE NE, Section 4, Block 10. H. F. Wilcox Oil & Gas Co.'s No. 1 University, drilling at 3,780 feet, C SE SE, Section 20, Block 30, University. F. P. Zoch and others' No. 1 University, shut down at 2,005 feet.

### Culberson County

James H. Gardner and others' No. 1 Radford, rig on the ground, C SE, Section 29, Block 62, Public school land. Plymouth Oil Co.'s (Big Lake), No. 1 C. L. Cass, shut down at 100 feet, C W half, Section 44, Block 45, Public school land. Pure Oil Co.'s No. 1 Kloch & Rumsey, rig.

### Ector County

J. S. Cosden and others' No. 1-A G. W. Connell, rainbow show of oil at 3,283 feet, show of gas at 3,365 feet, shut down at 3,375 feet, C NE, Section 13, Block B-16, Public school land; No. 1-B W. E. Connell, drilling at 3,760 feet, C NW, Section 16, Block B-16, Public school land. The Exploration company's No. 1 Kloh & Rumsey, drilling at 3,600 feet, CEL, Section 39, Block 45, Public school land; No. 1 J. D. Slater, rigging up, C SW, Section 10, Block 45, T. & P. Survey, Township 1s. Llano Oil Co.'s No. 1 E. P. Cowden, drilling at 2,704 feet. Sid Richardson's (Leigh Taliaferro) No. 1 Henderson, top salt 1,665 feet, drilling at 1,685 feet, C SE, Section 3, Block 43, T. & P. Survey, Township 3s. Simms Oil Co.'s No. 1 W. P. Edwards, drilling at 3,080 feet, C SW, Section 44, Block 43, T. & P. Survey, Township 3s. F. E. Skinner and Eastland Oil Co.'s No. 1 J. W. Buchanan, shut down for orders at 3,523 feet, C NW, Section 20, Block 45, T. & P. Survey, Township 2s.

### Fisher County

Ideal Oil Co.'s No. 1 W. F. Martin, drilling at 3,140 feet. E. W. Raney's No. 1 J. L. Marberry, drilling at 1,500 feet.

### Gaines County

Huconey Oil Co.'s No. 1 Lindsey, shut down at 3,255 feet, contract complete.

### Garza County

Deep Rock Oil Co.'s No. 1 S. M. Swenson, drilling at 3,240 feet. Emerald Oil Co.'s No. 1-A Connell, shut down at 3,200 feet; No. 1 J. M. Boren, plugged back to 2,050 feet from 2,600 feet, shot with 180 quarts at 1,970-2,002 feet, swabbed 10 bbls. oil and much water. Packer was set at 1,635 feet and the well was put on the pump.

### Glasscock County

Mascho & Marland Oil Co.'s No. 1 Calder, running 8-inch at 2,075 feet. Plateau Oil Co.'s No. 1 L. S. Bell, fishing at 415 feet.

### Howard County

Lockhart & Co.'s No. 1 Roberts, cleaning out 650 feet; No. 1 Human (Scott), 2,000,000 feet of gas at 1,620 feet, showed salt water at 1,525-50 feet, fishing at 1,790 feet; No. 1-A Otis Chalk, drilling at 870 feet. Magnolia Petroleum Co.'s No. 1 Mary Chalk, drilling at 850 feet; No. 2 Otis Chalk, swabbed 75 bbls. after a shot at 1,550-1,619 feet; No. 3, drilling at 670 feet; No. 3-A Otis Chalk (was Owens & Sloan's No. 3 Chalk) standardizing at 1,582 feet. Marland Oil Co.'s No. 3 Otis Chalk, drilling at 1,000 feet; No. 4 Otis Chalk, rigging up 330 feet from south line and 990 feet from east line of lease. Reeves, Apperman and others' No. 1 H. R. Clay, underreaming 10-inch at 815 feet.

### Jeff Davis County

Herbert Oil Co.'s No. 1 T. M. Wingo, underreaming 6-inch at 3,012 feet. Humble Oil & Refining Co.'s No. 1 W. W. McCutcheon, drilling at 3,115 feet. J. K. Hughes Development Co.'s No. 1 J. Z. Means, drilling at 440 feet.

### Kent County

The Texas Company's No. 1 Barron, running 5⅜-inch at 4,331 feet.

### Kimble County

Dixie Oil Co.'s No. 1 Harrison, drilling at 480 feet.

### Loving County

Lockhart & Co.'s No. 1 E. L. Allen, drilling at 2,806 feet.

### Lynn County

The Hart Oil Corp.'s No. 1 C. O. Edwards, shut down at 1,400 feet.

### Menard County

J. R. Lewis and others' No. 1 White, spudding at 180 feet.

### Midland County

M. Agress and others' No. 1 Jones, shut down at 2,115 feet.

### Mitchell County

Teas & Stivers' No. 1 Hardee, fishing casing at 485 feet. B. H. Cogdell's No. 1-C F. E. McKenzie, shut down at 125 feet. Owens & Sloan's No. 1 C. P. Conoway, drilling at 2,610 feet. Magnolia Petroleum Co.'s No. 2 Foster, drilling at 1,500 feet; No. 1 G. W. Womack, shut down at 2,953 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Ellwood, drilling at 1,300 feet. The California Co.'s No. 1 J. J. Handley, swabbed 8 bbls. at 2,930-3,035 feet. F. P. Zoch and others' No. 1 J. J. Ford, drilling at 1,425 feet.

### Nolan County

Huconey Gas Co.'s No. 1 Arthur Sears, drilling at 2,150 feet.

### Pecos County

Tom Adams Oil Co.'s No. 2 Gray, temporarily abandoned at 115 feet. Benedum & Trees' No. 1 J. C. Trees, drilling at 200 feet. Buell and others' No. 1 Hagan (W. W. Batcheler) shut down at 540 feet. Dixie Oil Co.'s No. 1 Hershenson, drilling at 5,300 feet. Cromwell & Kimberlin's No. 1 Scharff Blackman, spudding. Transcontinental Oil Co.'s No. 1 Perry, straightening hole at 3,535 feet. Southern Development Co.'s No. 1 R. G. Heiner, temporarily abandoned. Quinby Oil Co.'s No. 1 Townsite, shut down at 3,280 feet, show of gas at 3,260 feet. West Texas Exploration Co.'s No. 1 Macy, temporarily abandoned at 1,160 feet.

### Presidio County

Headlock & Miller's No. 1 Tootle estate, shut down at 2,340 feet. H. D. Camp and others' No. 1 University, shut down at 2,786 feet. Marland Oil and Texon Oil Co.'s No. 1 Sawyer, drilling at 2,342 feet after setting casing by tools. Moody Oil Corp.'s No. 1 Sawyer, spudding at 150 feet. Roxana Petroleum Corp.'s No. 1 Boyd, drilling at 725 feet. Ben Simon and others' No. 1 R. A. Walters, drilling at 2,885 feet, show of oil at 2,590 feet, enough sulphur water to drill with, at 2,700 feet.

### Reeves County

Schooler, Black and others' No. 1 Abram, drilling at 2,500 feet. Grisham & Hunter's No. 1 State land, underreaming at 825 feet.

### Sterling County

Co-Operative Lease & Development Co.'s No. 1-A E. W. Douthett, shut down at 3,100 feet. The Exploration Co.'s No. 1 C. A. Boone, drilling at 2,550 feet. H. D. Runnels' No. 2 L. T. Clark, shut down for orders at 1,175 feet.

### Runnels County

Red Bank Oil Co.'s No. 1 Fowler, drilling at 650 feet. F. P. Zoch and others' No. 1 Bruce, fishing at 325 feet.

### Schleicher County

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, spudded and shut down. Cope & Dalton's No. 1 Sol Meyer, drilling at 1,525 feet.

### Stonewall County

Arkansas Gas & Fuel Co.'s No. 1 Craft, drilling at 4,270 feet, black lime. Ward Syndicate's No. 1 J. A. Ward, shut down at 3,828 feet.

### Terrell County

Sun Oil Co.'s No. 1 Scott, straight-reaming 900 feet. W. T. Williams and others' No. 1 Robertson, drilling at 1,690 feet.

### Terry County

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, rig.

### Tom Green County

M. D. Bryant and others' No. 1 Llano County school land, trying to run 6⅝-inch at 2,980 feet. Texon Oil & Land Co. and Marland Oil Co.'s No. 2 Sorrell, drilling at 250 feet. World Oil Co.'s No. 1 Pulliam, set 6-inch at 3,382 feet, and cleaning out.

### Upton County

Amerada Oil Corp.'s No. 1 Ed. S. Hughes, rigging up. Dixie Oil Co.'s No. 8 Burleson, drilling at 2,190 feet, top of pay at 2,098 feet; No. 5 Hughes, top salt at 515 feet, drilling at 1,930 feet; No. 6 Hughes, top of salt at 500 feet, 1,946 feet running 6-inch; No. 7 Hughes, top salt 480 feet, drilling at 1,160 feet. W. H. Dunning and others' No. 1 Crier-McIlroy, drilling at 2,225 feet. Gulf Production Co.'s No. 2 M. L. Baker, shot with 180 quarts at 2,165-2,239 feet, total depth 2,240 feet, 12 gallons of oil and 3 gallons of water per hour; plugged and abandoned; No. 1 M. L. Baker-B, swabbed 65 bbls. in 10 hours at 1,400 feet oil in hole, 2,270 feet total depth. Gulf Production Co.'s No. 1 J. H. Shirk-D. 1,500 feet of oil and some water in hole at 2,286-88 feet; No. 1 Sanger, total depth 3,275 feet, brown lime, hole full of water, drilling up underreamer lugs. Humble Oil & Refining Co.'s No. 3 A. S. Burleson, top salt at 565 feet, drilling at 1,850 feet; No. 4 A. S. Burleson, top salt 545 feet, drilling at 1,425 feet; No. 5, building rig; No. 1 J. T. McIlroy, top lime at 3,438 feet, drilling at 3,455 feet. Independent Oil & Gas Co.'s No. 3 Emma Wooley, top salt at 495 feet, drilling at 1,915 feet; No. 4 shut down at 1,966 feet; No. 5, rig; No. 8 moving in material; No. 3 Burleson, shut down at 2,200-15 feet, with 300 feet of oil in the hole; No. 4 building rig, one location east of No. 2. Johnson & McCamey's No. 1 Shirk, top salt 695 feet, running 6-inch at 2,150 feet (taken over by Wentz Oil Corp.). Kirkwood and others' No. 1 Rankin, rainbow show at 3,820 feet, shut down at 3,950 feet, sulphur water at 3,930-38 feet. McMan Oil & Gas Co.'s No. 2 M. L. Baker, rig. Marland Oil Co.'s No. 1 Shirley, building rig. Marland Oil Co. and Texon Oil & Land Co.'s No. 1 Halff, drilling 820 feet. Roxana Petroleum Corp.'s No. 2 Hughes, moving in material; No. 3 Della Bowen, top salt 515 feet, drilling at 1,815 feet; No. 2 Estep, building rig. Sartain & Davis' No. 1 Bull, top salt at 1,660 feet, shut down at 1,660 feet. Skelly Oil Co.'s No. 1 O. F. Jones, top salt at 1,761 feet, drilling at 2,485 feet. Sun Oil Co.'s No. 4 Burleson, top pay 2,085 feet, drilling at 2,095 feet, 250 feet of oil in the hole; No. 5 Burleson, top pay 2,067 feet, drilling at 2,080 feet, 200 feet of oil in the hole. The Texas Company's No. 8 R. King, top salt 485 feet, drilling at 1,560 feet; No. 9, top salt 510 feet, drilling at 1,730 feet; No. 1 A. S. Burleson, drilling at 2,144 feet; No. 3 A. S. Burleson, drilling at 425 feet; No. 4 top salt 555 feet drilling at 1,360 feet. Texas Pacific Coal & Oil Co.'s No. 2 Shirk, drilling at 2,125 feet; No. 3, rig; No. 4, rig.

### Val Verde County

A. Blume's No. 1 Moore estate, drilling at 2,540 feet. Curse Williams' No. 1 Holman, rigging up. East Del Rio Oil Co.'s No. 1 Russell and Weatherbee, shut

down at 2,954 feet. Hiawatha Oil Co.'s No. 1 Sellers, rigging up. Independent Operators' No. 1 Whitehead, shut down at 3,712 feet. Plateau Oil Co.'s No. 1 Harrison, shut down for 6-inch casing at 3,156 feet. Transcontinental Oil Co.'s No. 1 W. S. Stevenson, drilling at 800 feet.

**Winkler County**

R. S. Matthews and others' No. 1 Cowden Cattle Co., shut down at 160 feet spudding water well. F. P. Zoch and others' No. 1 John Sealy, shut down at 200 feet clearing titles. P. A. Westbrook and others' No. 1 T. G. Hendricks, deepened to 2,602 feet, fishing tools. Leigh Taliaferro's No. 1 Sealy, top salt at 1,035 feet, drilling at 2,450 feet. L. D. Ladd and others' No. 1 J. W. Amburgey, fishing for tools at 360 feet. Brandon & McCamey's No. 1 Kloh & Rumsey, drilling at 3,250 feet.

**NORTH CENTRAL TEXAS ESTIMATED PRODUCTION**
**Week Ending September 25, 1926**

| | This Week | Last Week |
|---|---|---|
| Ranger District— | | |
| Brown County | 12,103 | 11,586 |
| Callahan County | 4,348 | 4,543 |
| Coleman County | 1,800 | 1,785 |
| Comanche County | 1,780 | 1,615 |
| Palo Pinto County | 435 | 434 |
| Ranger County | 5,520 | 5,580 |
| Shackelford County | 10,309 | 10,931 |
| Stephens County | 11,162 | 11,395 |
| Total Ranger District | 47,455 | *48,188 |
| Wichita Falls District— | | |
| Electra | 19,281 | 16,825 |
| Burkburnett | 11,702 | 11,700 |
| Iowa Park | 4,205 | 4,219 |
| Archer County | 30,854 | 30,671 |
| Clay County | 664 | 598 |
| Wilbarger County | 14,478 | 14,196 |
| Montague County | 8,155 | 7,481 |
| Young County | 8,356 | 8,522 |
| Jack County | 230 | 230 |
| Throckmorton County | 1,416 | 1,456 |
| Baylor County | 148 | 130 |
| Cooke County | 365 | 372 |
| Total Wichita Falls Dist. | 99,854 | 96,415 |
| West Texas District— | | |
| Big Lake Field | 28,838 | 29,780 |
| Crane County | 856 | 427 |
| Crockett County | 1,180 | 1,055 |
| Howard County | 377 | 338 |
| Mitchell County | 3,527 | 3,577 |
| Scurry County | 38 | 39 |
| Upton County | 8,725 | 7,125 |
| Jones County | 900 | 800 |
| Total West Texas Dist. | 44,441 | *42,341 |
| Grand Total | 191,750 | 187,744 |
| Increase | 4,006 | |

*Note—Jones County was included in the Ranger district last week, but was transferred to west Texas district this week, and totals of those districts for last week, shown above, were not changed.

**PRODUCTION BY FIELDS**
**For Week Ending September 20, 1926**

**Electra**

| | |
|---|---|
| Atlantic Oil Prod. Co. | 46 |
| Empire Gas & Fuel Co. | 727 |
| Gulf Prod. Co. | 871 |
| Humble Oil & Refg. Co. | 163 |
| Magnolia Pet. Co. | 3,383 |
| Panhandle Refg. Co. | 47 |
| Phillips Pet. Co. | 15 |
| Prairie Oil & Gas Co. | 91 |
| Rio Bravo Oil Co. | 539 |
| The Texas Company | 3,495 |
| Texhoma Oil Refg. Co. | 1,211 |
| Miscellaneous | 6,234 |
| Total | 16,822 |

**Burkburnett**

| | |
|---|---|
| Gulf Prod. Co. | 447 |
| Humble Oil & Refg. Co. | 420 |
| Magnolia Pet. Co. | 2,429 |
| Panhandle Refg. Co. | 218 |
| Prairie Oil & Gas Co. | 21 |
| Simms Oil Co. | 13 |
| Sinclair Oil & Gas Co. | 50 |
| Skelly Oil Co. | 146 |
| Sun Oil Co. | 50 |
| The Texas Company | 362 |
| Texhoma Oil & Refg. Co. | 518 |
| Miscellaneous | 7,033 |
| Total | 11,707 |

**Iowa Park**

| | |
|---|---|
| Atlantic Oil Prod. Co. | 55 |
| Gulf Prod. Co. | 112 |
| Humble Oil & Refg. Co. | 154 |
| Magnolia Pet. Co. | 309 |
| Panhandle Refg. Co. | 63 |
| Roxana Pet. Corp. | 9 |
| Simms Oil Co. | 82 |
| The Texas Company | 192 |
| Texhoma Oil & Refg. Co. | 536 |
| Miscellaneous | 2,709 |
| Total | 4,221 |

**Wilbarger**

| | |
|---|---|
| Atlantic Oil Prod. Co. | 56 |
| Empire Gas & Fuel Co. | 857 |
| Gulf Prod. Co. | 55 |
| Humble Oil & Refg. Co. | 2,877 |
| Phillips Pet. Co. | 5,823 |
| Prairie Oil & Gas Co. | 112 |
| Roxana Pet. Corp. | 367 |
| The Texas Company | 19 |
| Texhoma Oil & Refg. Co. | 77 |
| Miscellaneous | 3,953 |
| Total | 14,196 |

**Archer**

| | |
|---|---|
| Atlantic Oil Prod. Co. | 225 |
| Barnsdall Oil Co. | 939 |
| Cosden Co. | 364 |
| Empire Gas & Fuel Co. | 569 |
| Gulf Prod. Co. | 2,126 |
| Humble Oil & Refg. Co. | 1,083 |
| Independent Oil & Gas Co. | 5 |
| Magnolia Pet. Co. | 1,585 |
| Marland Oil Co. | 925 |
| Panhandle Refg. Co. | 127 |
| Phillips Pet. Co. | 576 |
| Prairie Oil & Gas Co. | 1,817 |
| Roxana Pet. Corp. | 465 |
| Simms Oil Co. | 1,077 |
| Sun Oil Co. | 246 |
| The Texas Company | 4,654 |
| Texhoma Oil & Refg. Co. | 2,682 |
| Tidal Oil Co. | 35 |
| Miscellaneous | 11,138 |
| Total | 30,638 |

**Young**

| | |
|---|---|
| Atlantic Oil Prod. Co. | 749 |
| J. S. Cosden, Inc. | 213 |
| Gulf Prod. Co. | 193 |
| Humble Oil & Refg. Co. | 276 |
| Magnolia Pet. Co. | 133 |
| Marland Oil Co. | 2 |
| Panhandle Refg. Co. | 136 |
| Phillips Pet. Co. | 19 |
| Prairie Oil & Gas Co. | 8 |
| Roxana Pet. Corp. | 138 |
| Simms Oil Co. | 536 |
| Sinclair Oil & Gas Co. | 368 |
| Sun Oil Co. | 218 |
| The Texas Company | 323 |
| Texhoma Oil & Refg. Co. | 322 |
| Tidal Oil Co. | 161 |
| Miscellaneous | 4,737 |
| Total | 8,532 |

**Stephens**

| | |
|---|---|
| Arkansas Fuel Oil Co. | 25 |
| Empire Gas & Fuel Co. | 25 |
| Gulf Prod. Co. | 1,078 |
| Humble Oil & Refg. Co. | 590 |
| Magnolia Pet. Co. | 345 |
| Mid-Kansas Oil & Gas Co. | 1,596 |
| Phillips Pet. Co. | 375 |
| Prairie Oil & Gas Co. | 760 |
| Republic Prod. Co. | 135 |
| Roxana Pet. Corp. | 45 |
| Simms Oil Co. | 30 |
| Sinclair Oil & Gas Co. | 70 |
| Sun Oil Co. | 160 |
| The Texas Company | 920 |
| Texas Pacific Coal & Oil Co. | 1,100 |
| Miscellaneous | 4,137 |
| Total | 11,391 |

**Shackelford**

| | |
|---|---|
| Amerada Pet. Corp. | 3 |
| Empire Gas & Fuel Co. | 15 |
| Humble Oil & Refg. Co. | 1,480 |
| Independent Oil & Gas Co. | 8 |
| Magnolia Pet. Co. | 60 |
| Phillips Pet. Co. | 580 |
| Prairie Oil & Gas Co. | 10 |
| The Texas Company | 170 |
| Texhoma Oil & Refg. Co. | 65 |
| Miscellaneous | 8,540 |
| Total | 10,931 |

**Ranger**

| | |
|---|---|
| Arkansas Fuel Oil Co. | 5 |
| Gulf Prod. Co. | 522 |
| Humble Oil & Refg. Co. | 40 |
| Magnolia Pet. Co. | 550 |
| Mid-Kansas Oil & Gas Co. | 105 |
| Panhandle Refg. Co. | 115 |
| Phillips Pet. Co. | 15 |
| Prairie Oil & Gas Co. | 540 |
| Republic Prod. Co. | 40 |
| Simms Oil Co. | 20 |
| Sinclair Oil & Gas Co. | 270 |
| The Texas Company | 140 |
| Texas Pacific Coal & Oil Co. | 780 |
| Miscellaneous | 2,430 |
| Total | 5,572 |

**Eastland-Comanche**

| | |
|---|---|
| Empire Gas & Fuel Co. | 5 |
| Humble Oil & Refg. Co. | 90 |
| Magnolia Pet. Co. | 550 |
| Mid-Kansas Oil & Gas Co. | 135 |
| Phillips Pet. Co. | 35 |
| Prairie Oil & Gas Co. | 85 |
| Sinclair Oil & Gas Co. | 20 |
| Skelly Oil Co. | 125 |
| The Texas Company | 100 |
| Miscellaneous | 470 |
| Total | 1,615 |

**Brown**

| | |
|---|---|
| J. S. Cosden Co. | 615 |
| Humble Oil & Refg. Co. | 3,695 |
| Phillips Pet. Co. | 170 |
| Prairie Oil & Gas Co. | 595 |
| Simms Oil Co. | 20 |
| The Texas Company | 560 |
| Witherspoon Oil Co. | 20 |
| Miscellaneous | 5,911 |
| Total | 11,586 |

**Callahan**

| | |
|---|---|
| Amerada Pet. Corp. | 70 |
| Humble Oil & Refg. Co. | 2 |
| Prairie Oil & Gas Co. | 825 |
| The Texas Company | 105 |
| Texas Pacific Coal & Oil Co. | 20 |
| Miscellaneous | 3,480 |
| Total | 4,503 |

**Miscellaneous Pools**

| | |
|---|---|
| Reagan County | 29,780 |
| Clay County | 659 |
| Montague County | 7,466 |
| Jack County | 230 |
| Throckmorton County | 1,455 |
| Baylor County | 130 |
| Palo Pinto County | 434 |
| Coleman County | 1,785 |
| Scurry County | 39 |
| Mitchell County | 3,577 |
| Crane County | 427 |
| Crockett County | 1,045 |
| Upton County | 6,989 |
| Howard County | 338 |
| Cooke County | 372 |
| Total | 54,726 |

**Panhandle**

| | |
|---|---|
| Carson County | 4,219 |
| Hutchinson County | 112,515 |
| Wheeler County | 415 |
| Gray County | 4,253 |
| Potter County | 30 |
| Total | 121,432 |
| Grand Total | 307,872 |

## RED SEA-MEDITERRANEAN LINE

Deputy Chairman Sir John Cadman, of the Anglo-Persian Oil Co., is reported to have stated that the company is considering laying a pipeline between the Red Sea and the Mediterranean, to avoid bringing tankers through Suez Canal and thereby saving the heavy dues.

## APPELATE COURT VOIDS MAMMOTH OIL LEASE TO TEAPOT DOME, WYOMING

ST. LOUIS, Sept. 28.—The United States circuit court of appeals today reversed and remanded the decision of the district court at Cheyenne, Wyo., upholding the Teapot Dome oil lease obtained by Harry F. Sinclair and associates from the government while Albert B. Fall was secretary of the interior.

The appellate court's decision is sweeping in effect and instructs the lower court immediately to cancel the Mammoth Oil company's lease and to enjoin it from further trespassing on government lands.

The opinion was received here from William S. Kenyon, of Fort Dodge, Iowa, presiding judge of the appelate court.

The lower court is instructed to ask the Mammoth Oil company for an accounting of all oil and petroleum products taken from the government's naval oil reserve during its tenure.

## SPINDLETOP DEEP SAND LIKELY TO MAKE RECORD

BEAUMONT, Tex., Sept. 24.—The deep sand section of the Spindletop Pool bids fair to exceed any other producing district in the United States in the amount of oil taken from a limited area. The experience of the Gulf Producion Co. there is a case in point. That company has eight acres on the southwest side, six of which have proved good. The company has 17 wells on the 6 acres. It drilled 20 but 3 were failures. The first well, No. 1 A Weed, came in June 29. Since that time the gross production of the company has been approximately 1,500,000 bbls. or about 250,000 bbls to the acre, coming from sands at 2,500 feet, 3,000, 3,500 and 4,244 feet, the latter a new deeper sand developed in No. 4-A Weed.

No. 4 Weed, which came in September 15 flowing 4,000 bbls. 27 gravity oil through a ¾-inch choke, has been making 3,500 bbls. through ½-inch choker. It was opened full for part of one day and flowed at the rate of 15,000 bbls. per day, but showed some water and choked down again. Old wells in the vicinity of No. 4-A Weed are being drilled deeper to the lower pay.

The nearest approach to the record being made at Spindletop is the Japhet 20 acres on the east side of the West Columbia Pool, opened by the Humble Oil & Refining Co. That lease yielded 12,000,000 bbls in eight years compared with the six acres at Spindletop in two and one half months. The famous Long Beach Field in California is credited with yielding 200,000 bbls. per acre covering a six-year period.

The Landslide and Stevenson tracts in the deep sand section of the Humble Pool were both prolific producers, but the acreage was much more extensive than either Spindletop or West Columbia. The Stevenson lease contains 525 acres divided into 25-acre tracts on which The Texas Company and the Farmers Petroleum Co. drilled on alternate tracts. The wells were spaced 250 feet distant, while at Spindletop the derricks almost touch, so close are the offsets.

The Gulf Production Co. is credited with a daily average of 41,000 bbls. per day from its 17 wells at Spindletop. The Yount Lee Oil Co. has 28 deep sand wells, its production being placed at 3,200 bbls. per day.

## INCREASE GASOLINE TAX

AUSTIN, Tex., Sept. 28.—The house of representatives of the Texas legislature, meeting in special session, today finally passed a bill increasing the gasoline gallonage tax from 1 to 3 cents. The bill now goes to the state senate.

# Crude and Refined Oil Stocks Continue Downward Movement

Pipeline and tank farm gross domestic crude oil stocks east of the Rocky Mountains decreased 194,000 bbls. in the month of August, according to returns compiled by the American Petroleum Institute from reports made to it by representative companies. The net change shown by the reporting companies accounts for the increases and decreases in general crude oil stocks, including crude oil in transit but not producers' stocks.

The following is the American Petroleum Institute's summary for the month of August of the increases and decreases in stocks at refineries covering approximately 83 per cent of the operating capacity east of California. (In barrels of 42 gallons.)

| | Increase | Decrease |
|---|---|---|
| Domestic crude oil | 727,000 | ..... |
| Foreign crude oil | ..... | 288,000 |
| Gasoline | ..... | 2,359,000 |
| Kerosene | 72,000 | ..... |
| Gas and fuel oil | 1,122,000 | ..... |
| Lubricating | 70,000 | ..... |
| Miscellaneous | ..... | 111,000 |
| Total | 1,991,000 | 2,758,000 |
| Deduct | ..... | 1,991,000 |
| Net decrease | ..... | 767,000 |

## CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California oil (crude and refined) at Atlantic and Gulf Coast ports for the week ended September 18, totaled 606,000 bbls., a daily average of 86,571 bbls., against 568,000 bbls., a daily average of 81,143 bbls. for the week ended September 11, and a daily average of 83,179 bbls. for the four weeks ended September 18, says the American Petroleum Institute.

**California Oil Receipts**
(Barrels of 42 gallons)

| | Week Ended Sept. 18 | Week Ended Sept. 11 |
|---|---|---|
| At Atlantic Coast Ports— | | |
| Baltimore | 124,000 | 191,000 |
| New York | 337,000 | 304,000 |
| Philadelphia | 145,000 | 73,000 |
| Others | ..... | ..... |
| Total | 606,000 | 568,000 |
| Daily average | 86,571 | 81,143 |
| Total Atlantic and Gulf Coast Ports | 606,000 | 568,000 |
| Daily average | 86,571 | 81,143 |
| Daily average Four Weeks Ended | 83,179 | 89,750 |
| Distribution of total California Oil Receipts is as follows: | | |
| Crude | 80,000 | 75,000 |
| Gasoline | 154,000 | ..... |
| Gas Oil | 138,000 | 73,000 |
| Fuel Oil | 234,000 | 420,000 |
| Total | 606,000 | 568,000 |

Imports of petroleum (crude and refined oils) at the principal United States ports for the week ended September 18, totaled 859,000 bbls., a daily average of 122,714 bbls., compared with 1,219,000 bbls., a daily average of 174,142 bbls. for the week ended September 11, and a daily average of 168,107 bbls. for the four weeks ended September 18.

**Imports of Petroleum**
(Barrels of 42 gallons)

| | Week Ended Sept. 18 | Week Ended Sept. 11 |
|---|---|---|
| At Atlantic Coast Ports— | | |
| Baltimore | ..... | 75,000 |
| New York | 533,000 | 599,000 |
| Others | ..... | 184,000 |
| Total | 533,000 | 858,000 |
| Daily average | 76,143 | 122,571 |
| At Gulf Coast Ports— | | |
| Galveston Dist. | 58,000 | 58,000 |
| New Orleans and Baton Rouge | 268,000 | 303,000 |
| Port Arthur and | | |
| Total | 326,000 | 361,000 |
| Daily average | 46,571 | 51,571 |
| At All United States Ports— | | |
| Total | 859,000 | 1,219,000 |
| Daily average | 122,714 | 174,142 |
| Daily Average Four Weeks Ended | 168,107 | 178,892 |

## CANADIANS IN MID-CONTINENT

CHATHAM, Ont., Sept. 25.—Hon. Alex Ross, minister of public works, and Hon. J. F. Lymburn, attorney general for the province of Alberta, left recently for Oklahoma and Texas where they will investigate the oil situation, with a view to preparing legislation governing oil development in Alberta.

## CRUDE OIL PRICES

(Continued from Page 123)

Co. †Posted by the Gulf Pipe Line Co. §Posted by the Louisiana Oil Refining Corp.

**ROCKY MOUNTAIN STATES**

**Ohio Oil Co.—Midwest Refining Co.**
(Effective May 17)

| | |
|---|---|
| Rock Creek (Wyo.) | $2.25 |
| Salt Creek— | |
| 29° to 29.9° | 1.73 |
| 30° to 30.9° | 1.81 |
| 31° to 31.9° | 1.89 |
| 32° to 32.9° | 1.97 |
| 33° to 33.9° | 2.05 |
| 34° to 34.9° | 2.13 |
| 35° to 35.9° | 2.21 |
| 36° to 36.9° | 2.29 |
| 37° and above | 2.37 |
| Big Muddy | 2.25 |
| Mule Creek | 1.75 |
| Grass Creek, light | 2.40 |
| Grass Creek, heavy | .90 |
| Elk Basin | 2.40 |
| Lance Creek | 2.40 |
| Rex Lake | 1.45 |
| Osage | 2.40 |
| Lost Soldier (Contract) | 1.35 |
| Greybull-Torchlight | 2.15 |
| Hamilton Dome | 1.35 |
| Cat Crek (Mont.) | 2.40 |
| Sunburst, (Mont.) (Sept. 14) | 1.25 |
| Fiorence (Colo.) | 1.60 |
| Artesia | 1.95 |
| Hogback (N. Mex.) | 2.45 |

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

**EASTERN STATES**

**Joseph Seep Purchasing Agency**
(Effective March 8)

| | |
|---|---|
| Penna Grade Oil in New York Transit Lines (New York) | $3.40 |
| Bradford District Oil in National Transit Lines (Pennsylvania) | 3.40 |
| Penna Grade Oil in National Transit Lines (Pa.) | 3.30 |
| Penna Grade Oil in Southwest Pa. Lines (West Virginia) | 3.30 |
| Penna Grade Oil in Eureka Pipe Line Lines (Pa.) | 3.25 |
| Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) | 3.05 |
| Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 17) | 2.40 |
| Corning Grade Oil in Buckeye Pipe Line Lines (Ohio) (May 22) | 2.55 |
| Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky) (May 17) | 2.50 |
| Somerset Light Oil in Cumberland Pipe Lines (Kentucky) (May 17) | 2.65 |
| Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (May 19) | 1.25 |
| Gaines (Pennsylvania) (Apr. 27) | 2.85 |
| Keister (Pennsylvania) (Feb. 15) | 2.30 |

**MIDDLE WESTERN STATES**

**Ohio Oil Co.**
(Effective May 17)

| | |
|---|---|
| Lima | $2.48 |
| Wooster | 2.55 |
| Illinois | 2.37 |
| Indiana | 2.25 |
| Princeton | 2.37 |
| Plymouth | 1.90 |
| Waterloo | 1.35 |
| *Western Kentucky (Sept. 8) | 2.10 |
| †Cumberland, Barren and Monroe Counties, Ky., (May 17) | 2.65 |
| **Oil in lines of Stoll Oil Refg. Co. in Oil City, Ky. | 2.65 |
| **Oil in lines of Stoll Refg. Co. in Tinsley Bottom, Tenn. | 2.46 |
| §Oil Springs (Canada) (May 18) | 2.95 |
| §Petrolia (Canada) (May 18) | 2.88 |

**Posted by Stoll Oil Refg. Co.
*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
§Posted by Imperial Oil Co., Ltd.

**MEXICO**
(Effective May 13)

| | |
|---|---|
| *Tuxpam light (f.o.b. Mex. ports) | $1.35 |
| §Panuco heavy (f.o.b. Mex. ports) | 1.15 |
| Tuxpam (New York) | 2.15 |
| Panuco (New York) | 1.80 |

*Plus 32.328c tax. §17.631c tax.


UNION TANK CAR COMPANY
21 EAST 40TH STREET, NEW YORK

THE EXECUTIVE AND GENERAL OFFICES OF THE UNION TANK CAR COMPANY WILL BE MOVED TO CHICAGO, ILL., SEPTEMBER 16, 1926. ADDRESS

UNION TANK CAR COMPANY
(METROPOLITAN BUILDING)
134 NORTH LA SALLE STREET
CHICAGO, ILLINOIS

ALL COMMUNICATIONS TO THIS COMPANY, WHICH ORDINARILY WOULD BE DELIVERED ON SEPTEMBER 16, AND THEREAFTER, SHOULD BE SENT TO THE CHICAGO ADDRESS.

E. L. GRIDLEY, SECRETARY



# FOR SALE

**1—125 horsepower Bessemer Gas Engine, 180 r.p.m., with Standard clutch, complete, ready to put into service.**

**ALSO**

**1—110 horsepower Bessemer Gas Engine, 180 r.p.m., with Standard clutch and equipment.**

**Especially suitable for oil or gas pumping operations.**

**Engines are in good condition. Only reason for disposal, substitution of electric drive.**

**Address inquiries to**

**SOUTH HILLS ICE COMPANY**
**South Hills Station**
**Pittsburgh, Pa.**


## RAINS CAUSE GLOOMY GASOLINE MARKET

(Continued from Page 24)

test material with a good flash on northern markets at 4 cents, which was below the Group 3 market.

Another factor also is entering the picture with a reduction in freight rates on this product and fuel oil from Montana refiners to several states in the Standard Oil Co. of Indiana territory. While the production of gas oil and fuel oil in Montana is not large, the fact that Montana gas oil can be put into the Chicago district nearly as low as Group 3 material throws some light on the possibilities of competition from that state.

Good Montana gas oil was being offered freely at Chicago Monday and Tuesday on a basis of 4 cents Group 3 so this, with the Louisiana material, resulted in an extremely soft tone to the Oklahoma situation.

**Gasoline and Naphtha**

A few Louisiana and Arkansas refiners also were offering some cheap gasoline which was having a bearish effect on the Oklahoma market. Several quotations as low as 10 cents on the U. S. Motor (58-60 437) gasoline were reported. The Group 3 market on this product was quoted at 10¼ to 10½ cents, but there was very little business at this figure and concessions were reported. A few purchases of this material at 10 cents out of the group were reported, but this price was not a general quotation Tuesday.

As previously mentioned, the reduction in export prices caused a very unsettled condition, especially in the higher gravity gasolines, and again the margins between the various grades of gasolines became very close. However, the 60 62 400 endpoint material was not offered to any extent below 10¾ to 11 cents, and the 64-66 375 at 11 to 11¼ cents on the spot market, although the new net contract price on the latter product in Oklahoma was only 10.55 cents. Some 375 gasoline was offered out of Texas on a basis of 10⅞ cents Group 3, but there is not a great deal of material available in Oklahoma.

It is admitted that these new low prices on gasoline are cramping refiners on present high crude prices, and there is considerable speculation as to whether the market can be forced much lower without refiners cutting operations materially or without a revision in the crude structure. A tankwagon reduction in the Standard Oil Co. of Indiana territory also is expected at any time.

**Natural Gasoline**

The dull refinery gasoline market also resulted in a very slack demand for natural gasolines, and these products were being offered Tuesday at prices much lower than a week ago. One large seller quoted Grade A freely at 9¾ cents Monday and Tuesday, and the B grades were available at 9¾ to 9½ cents, and Grade C at 9⅛ to 9¼ cents.

**Kerosene and Distillates**

There is no change in the general kerosene situation, and prices continued to drop sharply, with 41-43 water white material being obtainable Tuesday at 7¾ cents. The demand for distillates was only fair, although these products still were firm and no efforts were made to shade prices. There is an excellent demand for furnace oils in northern states, according to reports from Chicago jobbers, which lends strength to the distillate picture.

**Fuel Oil and Gas Oil**

All grades of fuel oil and gas oil were weaker Tuesday than a week ago, with a marked falling off in demand. The gas oil situation has been explained as due both to a decline in demand and also to competition from other refining centers. Good Oklahoma gas oil was plentiful at 4¼ cents, and fuel oil prices were from 2½ to 5 cents lower. Low grades were quoted Tuesday from $1.27½ to $1.32½, the 22-26 grade at $1.35, 24-26 at $1.37½ to $1.40, 26-30 at $1.45 to $1.50, and 28-30 at $1.57½ to $1.60.

**Lubricants and Wax**

Most grades of lubricating oil stocks continued steady in price, although there was a gradual slackening in demand, due both to the season and to the weather. Wax continued inactive.

## USE OF NATURAL GAS DECREASED DURING 1925

According to reports received by the Bureau of Mines from natural gas producers and distributors, the consumption of natural gas in the United States during 1925 was 1,188,439,000,000 feet. Of this total, 272,146,000,000 feet, or 23 per cent, was used in homes by 3,536,000 domestic consumers. This represents a decrease in domestic consumption from 1924 of nearly 5 per cent, but an increase in number of consumers of 92,600, or nearly 3 per cent. California was the only State to report a material decrease in number of domestic consumers. This decrease in total consumption, in the face of a greater number of users, is indicative either of better utilization of the gas available or of its displacement by other fuels as the result of higher prices. The average price paid by domestic consumers of natural gas was 56.0 cents per thousand feet, compared to 54.0 cents in 1924.

The relative rank of the principal gas-producing states was unchanged in 1925. Oklahoma, which ranks first, registered a 16 per cent gain in production; and Texas, the fifth in importance, a 26 per cent gain. California, West Virginia and Louisiana, which rank second, third and fourth, respectively, had slight declines in output.

Interstate transportation of natural gas, which is carried on mainly for domestic consumption, increased in 1925. The major interstate movement continued to be from West Virginia to Ohio.

Consumption of natural gas for industrial purposes amounted to 916,293,000,000 feet, an increase over 1925 of 7 per cent. Of this total, 46 per cent was used for field purposes, that is, for drilling, pumping, etc.; 15 per cent in the manufacture of carbon black; and the remainder in other industries.

## WEST VIRGINIA OIL AND GAS MEN MEET

PARKERSBURG, W. Va., Sept. 28.—Members of the West Virginia Oil and Gas Men's Association convened in this city today for their annual meeting.

The meeting was one of the most interesting in recent years, due largely to the fight made by the Hope Gas Co. to declare West Virginia's gross sales tax unconstitutional.

The meetings opened in the Camden Theater at 1 p. m. and a banquet will be given at the Masonic Temple this evening.

Among the speakers are Henry G. Wells of Boston, of the Massachusetts Public Utilities Commission. His subject will be "The Relation of the Public Utility to the Public Served." His talk will bear on the oil and gas business in particular.

Edwin C. Robinson of the state association is another prominent speaker. Mr. Robinson has been very active in working for an improved status for the oil and gas business in West Virginia.

Officers of the association are: James H. Dye, Charleston, president, manager of the Pure Oil Co.; John P. Flynn, Sistersville, vice president, president of the Reno Gas Co.; Edwin C. Robinson, of Fairmont, secretary and treasurer.

### DEATH OF CHARLES DAY

Charles Day, director of the Tidal Oil Co.'s production department since 1918, died last week at Canadian, Tex., where he had been operated upon for appendicitis. He had spent some time in the Amarillo Field, and was returning to his home in Tulsa when stricken.

# What Pump? We Nominate Transit

WHEN a chap has a real knotty problem in moving fluid, he's inclined to feel that he is a sort of pioneer. He knows in his bones that no other man ever had such a devil of a time.

As a matter of fact, the men who design and make Transit Pumps have probably been working away for a quarter of a century—or even much longer—at that very same problem, refining, progressing, improving.

There are Transit Pumps which will do with utmost efficiency the very things that most men go through with travail of spirit and gnashing of teeth.

If you are faced with the necessity for putting a larger volume through a pipe line that's already too small, or if you haven't been able to get a pump that will handle red hot tar at the refinery, or if anything else in the world worries you which savors of fluid and how to get it from where it is to where it isn't, call on the Frick-Reid Store in your field, or write our Tulsa office. There are also Transit Pumps for ordinary duties, which show their efficiency by long life and faithful service.

*West of the Mississippi, Stores Everywhere*
*East of the Mississippi, The Frick & Lindsay Company*

# FRICK-REID SUPPLY Co

**TULSA, OKLA.--- PITTSBURGH, PA.**

*In Oil Field Equipment—the most HUMAN organization in America*

# What Happens to Lub Oil in Engine

## Dirt and Dilution Soon Change Character of All Lubricating Oils. Presence of Sulphur in Fuel Supply Important

By W. G. Wall*

A close study of the properties of lubricating oils and the treatment they receive in the average motor car rather leads us to the conclusion that a gasoline automobile engine is no place for a self-respecting oil. We put fine new oil into the engine, do about all the things to it that we should not do and still expect it to lubricate all the parts properly.

We begin by letting road dust into the cylinders of the engine through the carburetor, and it gradually works its way past the pistons into the crankcase. Some also gets in through the breather-pipes, producing a very good grinding compound. We allow gasoline to mix with the oil, also water, some of which comes from combustion and, in cold weather, from condensation within the crankcase; and all this time we are subjecting part of the oil to a high temperature and mixing carbon with it, so that after a short time the original oil is hard to recognize.

Some of us have been doing what we could to remedy this condition and, although we have gone at it in different ways, we all have had the same end in view. Some have worked on the theory that, if the dirt is kept out, or if the dirt that is in the oil is strained out, the thin oil, due to dilution, will not be harmful. Others have worked on the theory that, if the gasoline and water are kept out and the viscosity of the oil is kept up fairly well, the dirt will not do much harm on account of the thick oil film between the moving parts.

### Effect of Dirt and Dilution

I believe that it is necessary to work along both these lines and either keep out or get rid of both the dirt and the dilution. Few engineers appreciate the enormous amount of dirt that gets into the engine or the amount of dilution that gets by the pistons, or the great amount of water in the crankcase. This water not only dilutes the oil but also forms sulphuric acid, rusting the parts and in winter probably freezing at the oil pump, besides being instrumental in forming sludge.

Ordinarily, oil and water will not mix but, with the agitation due to the churning of the crankshaft and the movement of the pistons, they form an emulsion. When an emulsion is mixed with road dust or carbon particles, it gradually forms what is called sludge. If this stayed in the bottom of the crankcase and were not agitated in any way or pumped through the oil lines, it would not do much damage but, as it is sucked into the oil pump and from the pump probably into the crankshaft, it has a tendency to clog the oil holes and rapidly wear the bearings. Any strainer that takes out the dirt helps to alleviate these faults; but, to eliminate the sludge entirely, it is necessary to get rid of all the water in the crankcase.

Oils used in an engine soon become oxidized and black in color, due to the fact that they are exposed to very high temperatures on the cylinder walls. These temperatures often reach 2,500 degrees Fahrenheit. The oil also becomes oxidized by being heated to a high temperature, due to contact with the under side of the piston heads.

### Sulphur

Sulphur in the fuel, especially fuel containing benzol, often causes trouble. The sulphur probably forms dioxide and, by mixing with water in the crankcase, becomes sulphurous acid.

Emulsification and saponification are often confused. The former is a mechanical mixture of water and oil; the latter is a chemical combination of oil and water in the presence of an alkali.

I believe that a small amount of dilution in the crankcase, when no water is present, does no harm; in fact, in cold weather as much as 4 or 5 per cent of diluent is possibly beneficial, but more than 10 per cent is certainly detrimental. The purpose in using this rectifier has been to take out all the water and to keep the diluent between 4 and 5 per cent and the viscosity above 250 seconds at 100 degrees Fahrenheit.

In cold weather, very few engines, when operated without a rectifier, show less than 25 per cent dilution; they also show considerable water. A large number show from 40 to 50 per cent dilution and a viscosity as low as 80 seconds after a few hundred miles' run.

In fact, I have just received an analysis of some oil taken from a well-known car that had been run 480 miles. It showed 28 per cent of diluent, which is fairly low during March, and 4¾ per cent of water, but the viscosity was down to 54 seconds.

### Operation of Rectifier

In a rectifier the oil is forced to it by pressure of the oil pump at the rate of about 3 gallons per hour, somewhat slower when the engine is running at low speed and faster at high speed. That is, the oil in an average size crankcase is filtered and goes through the distilling apparatus about once every hour. The temperature of the oil in the distillation chamber will vary somewhat with the heat of the exhaust and with the speed of the engine and ranges from 180 to slightly less than 275 degrees Fahrenheit.

The question is often asked: How can you get all the gasoline out of the oil without heating it to a high temperature, when the endpoint of the gasoline used at present is 450 degrees Fahrenheit, or even higher? This is best answered by referring to one of Dalton's laws, which is, that when exposed to normal atmospheric pressure, any liquid, by reason of its vapor pressure, will give off vapor. As an illustration of this fact, a pan of water will gradually evaporate in a warm room, the atmosphere of which is not already saturated, yet to boil the water requires a temperature of 212 degrees Fahrenheit. At the boiling point, the vapor pressure is equal to the atmospheric pressure. You will often note vapor coming out of a radiator when the filler cap is open, although the temperature of the water is not more than 180 degrees Fahrenheit. So, it is possible to remove practically all the gasoline diluent at a somewhat lower temperature than would be supposed to be possible. This means that the time element is a large factor in eliminating the dilution. A lower temperature for a longer time will accomplish nearly the same result as a high temperature for a shorter time. Temperatures of the oil lower than 180 degrees Fahrenheit, however, seem to have very little effect at atmospheric pressure.

### Cracking of Lubricating Oil

Another question: Will not the lubricating oil crack and be converted into gasoline, thus eliminating part of the oil? This is possible but will seldom if ever happen, for a temperature of at least 650 degrees Fahrenheit at atmospheric pressure is required to crack oil into gasoline, and there is not much danger of the oil ever reaching so high a temperature. Oil is a very poor conductor of heat, so that, in order that the oil may reach a certain temperature, the container must be considerably hotter.

The specific gravity is not a dependable indication of the amount of diluent in oil. This is quite obvious, as oil diluted with 20 per cent of kerosene will not have the same specific gravity that it would have if diluted with 20 per cent of light gasoline.

With this type of rectifier, in which the exhaust gases are in a jacket surrounding the distillation chamber, there is very little difference between the temperatures in winter and in summer. The difference in temperature when the engine is running at slow speed and at high speed is much greater and, in this case, is partly compensated for by the faster oil flow through the distillation chamber as the speed of the engine and the suction from the carburetor increase.

### Requirements of Commercial Rectifier

A good commercial rectifier should accomplish the following things:

(1) Strain the dirt out of the lubricating oil, keeping it fairly clean.
(2) Distil off the diluent.
(3) Distil off the water.
(4) Maintain the viscosity.
(5) Eliminate the necessity for draining the crankcase so often.
(6) Increase the oil mileage materially.
(7) Increase the gasoline mileage as a result of using the gasoline distilled off.
(8) Prevent a large part of the wear on cylinder walls and bearings by maintaining the viscosity of the oil and straining out the dirt.
(9) Permit the use of lighter grades of oil the year round.
(10) Prevent the freezing of the oil pump in cold weather.
(11) Keep the pistons sealed and increase the compression and power; also help to prevent fouling of the spark plugs.
(12) Prevent rusting and the forming of sulphurous acid and sludge, by eliminating the water. This also prevents etching due to the acid.

Of the rectifiers on the market, some accomplish all these things to a certain extent; others accomplish some of them extremely well. Let us hope that some day we shall see a rectifier that will accomplish all these things perfectly.

*Consulting engineer, Indianapolis. Part of paper presented at meeting of Society of Automotive Engineers.

### OIL RECTIFIER

Manufacturers and distributors of lubricating oils have recently become very much interested in the oil rectifier developed by the automotive engineers to reduce lubricating oil costs in the operation of automobiles and other internal combustion engines.

In the accompanying paper presented at a meeting of the Society of Automotive Engineers, the writer discusses the problem of lubrication and the place of the rectifiers in engine operation. Following the presentation of several papers on the subject of the rectifiers and the general problem of lubrication a discussion took place, part of which is given here.

# Discussion at S.A.E. Meeting

Chairman G. T. Briggs[1]—What do you think of the proposition of R. E. Wilson, who says that the Standard Oil Co. will soon market a prediluted oil?

Mr. Wall—Mr. Wilson's hypothesis is based on the fact that, when oil is put into a crankcase and run in an engine, the dilution will finally reach a certain equilibrium; in other words, when the dilution reaches a certain percentage, the heat of the crankcase will maintain the oil at that point of dilution. I think the idea would be fine were not his hypothesis entirely wrong. If it were right, his oil proposition would be very good; but I have found out that, although there may be such a thing as equilibrium of the dilution in a crankcase in warm weather, when the crankcase gets fairly warm and the whole engine is rather hot, the longer an engine runs without a rectifier in cold weather, especially in short runs of from 4 to 6 miles, between which it stops and cools off, the more will the dilution increase. The curve, instead of reaching a point at which it is perfectly horizontal, shows that the dilution will increase and will continue to increase as long as the engine runs, that is, until a point is reached at which the dilution is so extremely high that it would make little difference to the parts lubricated whether it went higher or not.

A Member—What is the maximum temperature of the oil in warm weather and hard driving?

R. L. Skinner[2]—Under actual operating conditions, even with the thermostat operating, we have found that the heat of the oil reaches 240 or 250 degrees Fahrenheit, due to heat radiation from the top of the rectifier in the center of the unit, where the oil passes over. Under dynamometer conditions, where no allowance is made for heat radiation on the bottom of the rectifier, the temperature of the oil reaches about 400 degrees Fahrenheit.

A Member—What is the maximum temperature?

Mr. Skinner—Four hundred degrees Fahrenheit on a dynamometer and about 240 degrees Fahrenheit on the road are the hottest conditions we have experienced.

### Carbon in Crankcase Oil

A Member—You speak of carbon in the crankcase oil. What do you mean by that, and what is the source of this carbonaceous substance?

Mr. Skinner—It comes primarily from the oil's splashing up on the inner side of the piston and burning.

A Member—What importance do you attach to pour tests?

Mr. Skinner—Their importance concerns the circulation of oil at a low temperature, particularly in zero weather.

A Member—If two cups of oil, one that will flow at zero and one that is solid, are stirred there will be less resistance in oil that is solid than in oil that will run, owing to the very delicate set of the oil that seems to be solid. Do you know that to be a fact?

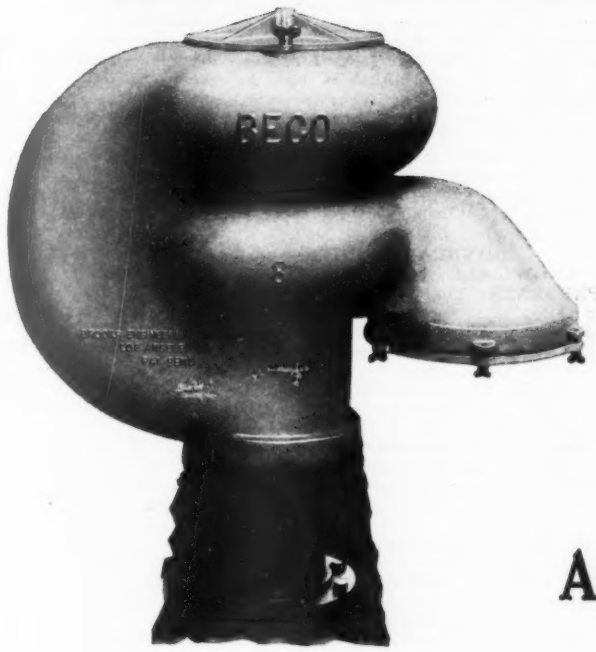
Mr. Skinner—No; but I know that solid oil will not flow into the pump.

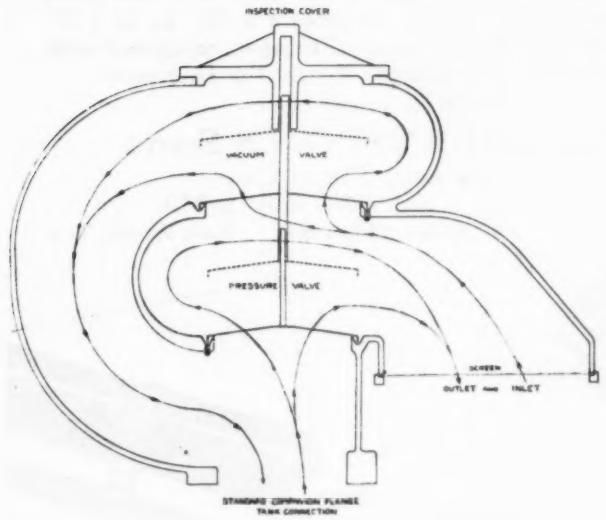
A Member—In an engine test some time ago at Purdue University, we used an oil rectifier that operated uner a wide-open throttle. We found that at the end of one-half hour the top of the rectifier was burned out. We made the test again with another rectifier, and the same thing happened twice. We would like to find out whether that was caused by our meth-

(Continued on Page 145)

[1]A. S. A. E.—General sales manager, Wheeler-Schebler Carburetor Co., Inc., Indianapolis.
[2]President and general manager, Skinner Automotive Device Co., Inc., Detroit.

# BECO

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The same degree of superiority in this Vent Valve exists in other Beco equipment—the result of 12 years of specialization in the design and manufacture of better tank equipment by Stephen H. Brooks. Literature upon request.

**Other Beco Improved Equipment Includes:**

- Flame Arrestors
- Automatic Tank Gauges
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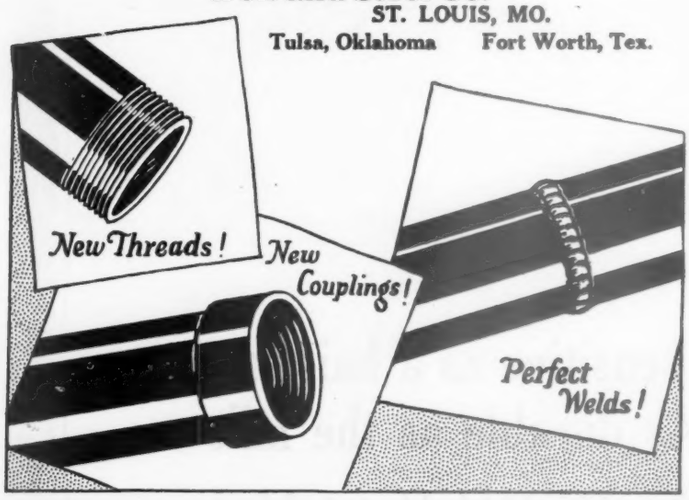
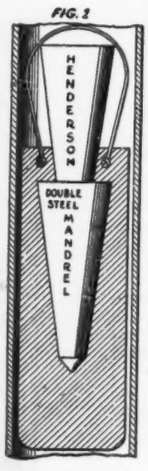
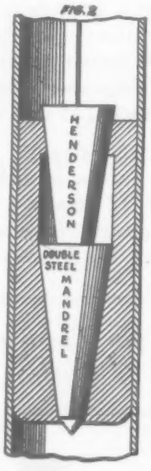



# HENDERSON-DOUBLE-STEEL-MANDREL LEAD-PLUG

*Patent Applied For*




Something new and superior to any plug on the market, in that the double mandrel will expand the lead body for its entire length, while a single cone mandrel type will expand the lead body only at the top. A little study of the cut which shows before and after will convince the practical producer of the advantage of the double mandrel.




*Manufactured by*

**The McJunkin Supply Company**

**Charleston, W. Va.**


## Mineral Deed Used in Acquiring Lands for Oil and Gas Purposes

The Texas Company has begun the use of the mineral deed to supersede the Mid-Continent lease form in acquiring new properties in Texas for oil and gas purposes, and has made a number of purchases with it in Sherman and Hansford Counties.

Recent court decisions, altogether to the detriment of oil operators, have made necessary a new form of contract between land owner and oil operator, and the form used by The Texas Company is intended to avoid litigation such as that which recently resulted unfavorably to the oil company, which proved a property to be productive and then, notwithstanding the plain terms of the lease, had most of the property taken from it by the decision of a Texas court.

The Texas Company's new form is given below:

MINERAL DEED

KNOW ALL MEN BY THESE PRESENTS: That (I, or we).....of.....for and in consideration of the sum of.....Dollars ($...) cash in hand paid by The Texas Company, a Texas corporation, Grantee, do hereby GRANT, BARGAIN, SELL AND CONVEY unto the said THE TEXAS COMPANY.....of the oil, gas and other minerals, whether similar or dissimilar, or, in or under the following described tract of land in the County of ....., State of Texas, to-wit:

.....

together with the rights of ingress and egress for the purpose of drilling or mining for, and producing, storing and transporting oil, gas and other minerals, and of erecting any and all necessary structures for such drilling, mining, transporting and storing, and erecting any and all buildings necessary or incident to such operation; with the right to remove any and all property of whatever kind or character placed on said premises.

It is agreed that The Texas Company, its successors or assigns, shall never be under obligation to drill or mine for oil or gas or other minerals, but that such mining or drilling, both before and after production, shall be wholly at the option of said grantee, its successors or assigns. However, should oil or gas be produced from said premises in paying quantities by The Texas Company, its successors or assigns, then there shall be paid to grantors, their heirs and assigns, a royalty of (⅛) one-eighth of the interest hereby conveyed in all oil and gas produced and saved by said grantee, its successors or assigns; The Texas Company, its successors or assigns, having free use of oil and gas for fuel for operations conducted on said premises.

TO HAVE AND TO HOLD the above described oil, gas and other minerals and the rights herein granted, all and singular, unto the said The Texas Company, its successors and assigns, forever; and we do hereby bind ourselves, our heirs, executors and administrators to warrant and forever defend all and singular said oil, gas and other minerals and the rights herein granted unto the said The Texas Company, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

EXECUTED this day the.....of .....A. D. 192..

WITNESS:

..... .....
..... .....
..... .....

THE STATE OF.....)
COUNTY OF .....)ss.

Before me, the undersigned authority, on this day personally appeared..... and his wife....., both known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and consideration therein expressed; and the aforesaid wife having been examined by me privily and apart from her husband, and having the same fully explained to her, she acknowledged said instrument to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.

Given under my hand and seal of office this.....day of....., 19...

.....
.....in and for
.....County, .....

THE STATE OF.....)
COUNTY OF .....)ss.

Before me, the undersigned authority, on this day personally appeared....., known to me to be the person.. whose name.....subscribed to the foregoing instrument, and acknowledged to me that.....executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this.....day of....., 19...

.....
.....in and for
.....County of.....

## AERIAL PHOTOGRAPHY OF MEXICAN OIL LANDS

NEW YORK, Sept. 25.—Pan American Petroleum & Transport Co. has completed the aerial photography of its Mexican land holdings and has several geographical expeditions mapping out hitherto unexplored properties. Considerable core drilling is being done on various properties to learn subsurface conditions.

Pan American is following a policy of closing in or reducing to a small percentage of the full flow all new wells. Well locations and drilling are being conducted to prove up the largest amounts of surrounding acreage. The northern properties are receiving particular attention as they have been little exploited, Pan-American having 1,500,000 acres in northern Mexico, the Ebano tract alone being 33 miles in width. Pan American's Cacalilao property, adjoining Ebano, has yielded more than 300,000.000 bbls. of oil to date. Within the last 60 days Gulf Oil has brought in two wells at Los Esteros, northeast of Pan American's properties.

### CALIFORNIA PETROLEUM FLEET?

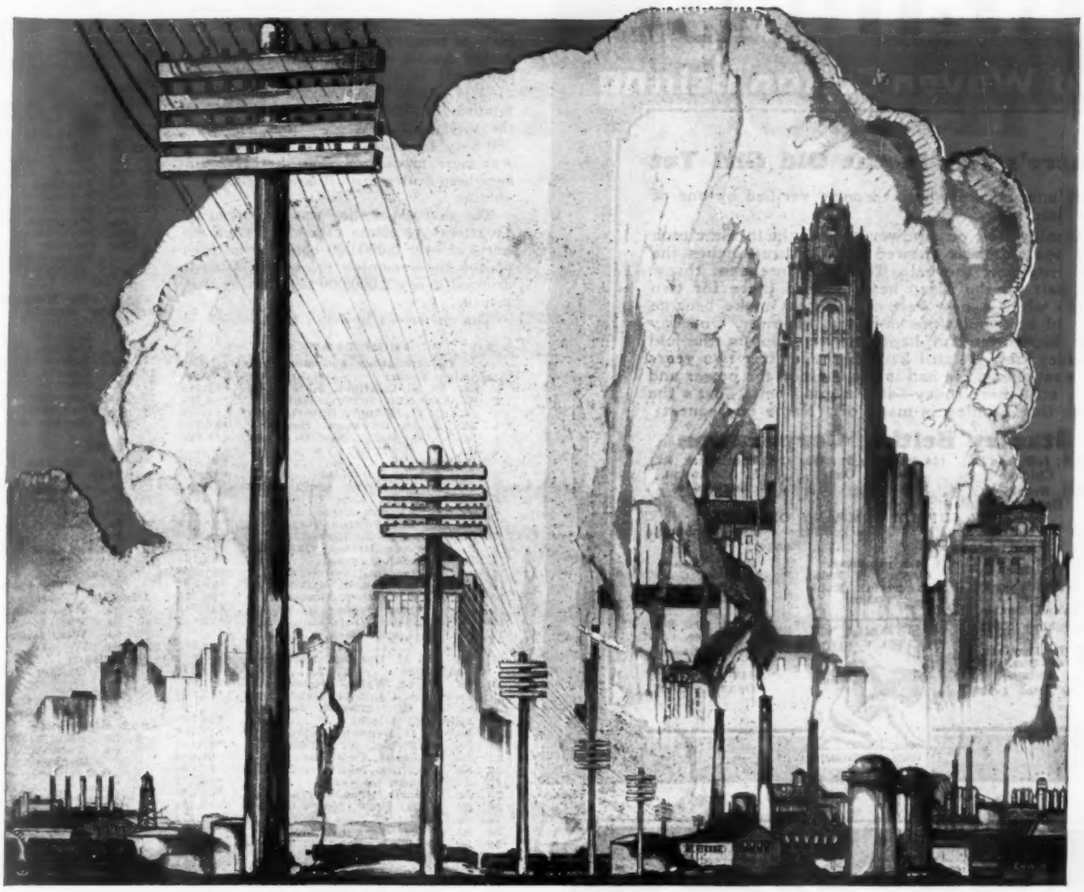
LOS ANGELES, Calif., Sept. 25.—That the California Petroleum Corporation is planning the immediate development of a marine and transporting department, with considerable floating equipment of its own, is the report following the appointment of William L. Bunker as marine superintendent. Bunker's appointment was followed by his departure East, and it is the belief of local shipping men he may buy two or more Shipping Board tankers before his return. Such a plan for a transporting fleet would synchronize with the company's expansion into the retail trade now under way, with a large number of service stations rising up and down the coast.

### UNIVERSITY ROYALTIES

AUSTIN, Tex., Sept. 25.—The University of Texas' permanent fund was increased by $241,007 by oil royalty payments on oil produced in the Reagan County Field, it was announced by Land Commissioner J. T. Robison. The Texon Oil Co. paid $75,952, and the Big Lake Oil Co., $165,045. The Big Lake company's payment is a record for a single month's production by either of the companies operating on university-owned lands.

### BRYAN'S GASOLINE PLANK

Charles W. Bryan, ex-governor of Nebraska, is quoted by Nebraska oil men as saying he expected to be re-elected governor, and would make every effort to see that Nebraska cities and villages go into the gasoline business on an extensive scale.



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# Mexican Shipments 1,278,295 Barrels Less Than in July

By George Blardone

TAMPICO, Mex., Sept. 25.—A sharp decline in vessel shipments from Mexican ports of primary clearance was registered during August when compared with the movement in July, the decline being 1,278,295 bbls. The August movement totalled 6,245,063 bbls., a decrease from the movement in August 1925, of 301,280 bbls. In August, 1925, however, there was more production shut in that could have been drawn upon if desired than now obtains.

The sharpest decline was registered by Huasteca Petroleum Co., which from exports of over 3,000,000 bbls. during each of the three months prior to August, dropped to say 2,000,000 bbls. during that month.

The movement in detail follows:

**FROM TAMPICO**

**By Huasteca Petroleum Co.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 1 | Ss. | C. A. Canfield, | New York | *63,278 |
| 1 | Ss. | Norman Bridge, | Houston | *41,293 |
| 4 | Ss. | O. D. Bennett, | New Orleans | 46,584 |
| 4 | Ss. | P. H. Harwood, | Boston | *66,263 |
| 4 | Ss. | J. O. Boyd, | New Orleans | †18,525 |
| 5 | Ss. | P. H. Harwood, | Jacksonville | †34,728 |
| 5 | Ss. | Comet, | Galveston | *18,012 |
| 5 | Ss. | H. G. Wylie, | Jacksonville | *40,650 |
| 6 | Ss. | Mantilla, | New Orleans | 52,671 |
| 6 | Ss. | Inverarder, | Lizard f/o | *49,339 |
| 8 | Ss. | M. Luckenbach, | Key West | *48,318 |
| 9 | Ss. | Kennebeck, | Lizard f/o | *48,750 |
| 9 | Ss. | Norman Bridge, | Galveston | *40,239 |
| 10 | Ss. | Pioneer, | Tampa | *49,723 |
| 11 | Ss. | Mirlo, | Baltimore | 61,968 |
| 15 | Ss. | O. D. Bennett, | Galveston | *49,691 |
| 15 | Ss. | E. L. Doheny, | Boston | *61,263 |
| 15 | Ss. | Norman Bridge, | Houston | *40,745 |
| 17 | Ss. | Mantilla, | Galveston | *52,672 |
| 17 | Ss. | M. Luckenbach, | Jacksonville | *49,981 |
| 18 | Ss. | W. H. Doheny, | Norfolk & Baltimore | †78,272 |
| 19 | Ss. | H. G. Wylie, | Houston | *41,536 |
| 20 | Ss. | C. A. Canfield, | New York | *62,906 |
| 20 | Ss. | C. E. Harwood, | Jacksonville and Miami | †34,749 |
| 21 | Ss. | O. D. Bennett, | Galveston | *49,460 |
| 22 | Ss. | Agwimex, | New York | *83,192 |
| 22 | Ss. | Montana, | Baltimore | 69,648 |
| 23 | Ss. | Mantilla, | New Orleans | 53,086 |
| 23 | Ss. | Comet, | Galveston | *17,897 |
| 23 | Ss. | Caloric, | Lizard f/o | *62,391 |
| 23 | Ss. | J. O. Boyd, | New Orleans | 18,291 |
| 25 | Ss. | Malacca, | New York | *67,979 |
| 26 | Ss. | P. H. Harwood, | Boston | *65,616 |
| 26 | Ss. | H. G. Wylie, | Port Tarafa, Cuba | *49,682 |
| 27 | Ss. | Norman Bridge, | Houston | *40,940 |
| 28 | Ss. | O. D. Bennett, | Portland | *47,056 |
| 28 | Ss. | Comet, | Galveston | *17,902 |
| 31 | Ss. | Ardmore, | New York | *77,501 |
| | | Coastwise deliveries | | *112,387 |
| | | Coastwise deliveries | | †3,874 |
| | | Bunker deliveries | | 76,349 |
| | | Total | | 2,047,366 |

**By Transcontinental Petroleum Co.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 2 | Ss. | Agwimex, | New York | 81,783 |
| 6 | Ss. | Princeton, | Baton Rouge | 50,110 |
| 6 | Ss. | H. M. Flagler, | Southhampton | 70,855 |
| 7 | Ss. | J. A. Bostwick, | Montreal | 72,806 |
| 8 | Ss. | F-Sulphur 1, | Banes, Cuba | 18,913 |
| 11 | Ss. | Agwihavre, | Baltimore | 84,710 |
| 11 | Ss. | Matinnicock, | New York | 76,208 |
| 14 | Ss. | Glenpool, | Charleston | 53,197 |
| 14 | Ss. | Cecil County, | New York | 73,186 |
| 15 | Ss. | Muskogee, | Baltimore | 67,632 |
| 16 | Ss. | Princeton, | Baton Rouge | 50,197 |
| 16 | Ss. | Reginolite, | Loco, B. C. | 79,823 |
| 20 | Ss. | Hagan, | New York | 34,241 |
| 20 | Ss. | Hagan, | New York | †32,435 |
| 21 | Ss. | Pioneer, | Cuba | 46,059 |
| 23 | Ss. | Clement Smith, | Baltimore | 71,951 |
| 26 | Ss. | Princeton, | Charleston | 48,815 |
| 27 | Ss. | Dillwyn, | Cuba | *63,680 |
| 29 | Ss. | Calgarolite, | Montreal | 77,538 |
| | | Bunker deliveries | | 76,542 |
| | | Total | | 1,230,687 |

**By Mexican Eagle Oil Co., Ltd.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 4 | Ss. | Athelmere, Land's End | f/o | †56,648 |
| 6 | Ss. | British Light, Key West | f/o | *56,420 |
| 10 | Ss. | San Macedonio, | Nassau f/o | †37,727 |
| 10 | Ss. | Essex Friar, | Brazil Ports | †25,058 |
| 12 | Ss. | San Leon, | Nassau f/o | *54,726 |
| 15 | Ss. | San Gaspar, | Nassau f/o | *84,451 |
| 18 | Ss. | San Silvestre, | Nassau f/o | †67,063 |
| 20 | Ss. | San Leonardo, Key West | f/o | *50,264 |
| 21 | Ss. | Malabar, | New York | *75,144 |
| 21 | Ss. | Java, | Valencia f/o | *80,107 |
| 24 | Ss. | British Light, Key West | f/o | *57,566 |
| 25 | Ss. | F-Sulphur (6), | New York | *38,862 |
| 30 | Ss. | San Zotico, | Nassau f/o | *50,623 |
| 31 | Ss. | Essex Glade, | Argentina | †27,772 |
| | | Coastwise deliveries | | †28,674 |
| | | Coastwise deliveries | | *128,712 |
| | | Bunker deliveries | | 44,502 |
| | | Total | | 964,319 |

**By Mexican Sinclair Petroleum Corp.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 3 | Ss. | E. V. Thayer, | New Orleans | 70,920 |
| 4 | Ss. | Mirita, | Havana | 53,897 |
| 6 | Ss. | Gene Crawley, | New Orleans | 30,013 |
| 8 | Ss. | Harry Farnum, | New Orleans | 29,952 |
| 8 | Ss. | W. L. Connelly, | Limon, C. A. | 30,080 |
| 13 | Ss. | E. V. Thayer, | Havana and Matanzas | 70,360 |
| 14 | Ss. | Madrono, | New Orleans | 56,875 |
| 15 | Ss. | Gene Crawley, | Puerto Barrios, C. A. | 29,691 |
| 16 | Ss. | Mirita, | Nuevitas and Tarafa | 52,876 |
| 17 | Ss. | Harry Farnum, | New Orleans | 30,228 |
| 25 | Ss. | E. V. Thayer, | New Orleans | 68,456 |
| 25 | Ss. | Madrono, | Bocas & Limon, C. A. | 53,402 |
| 28 | Ss. | Gene Crawley, | New Orleans | 30,299 |
| 29 | Ss. | Harry Farnum, | Havana | 28,861 |
| | | Bunker deliveries | | 20,204 |
| | | Total | | 655,114 |

**By Cia. Mexicana Holdanesa La Corona, S. A. (Royal Dutch Shell)**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 12 | Ss. | Jole Fassio, | Nassau f/o | 40,127 |
| 15 | Ss. | Ebros, | Flushing | 25,053 |
| 17 | Ss. | Belridge, | New Orleans | 63,440 |
| 20 | Ss. | F-Sulphur (1), | Freeport | 19,138 |
| 21 | Ss. | San Antonio, | New Orleans | 45,382 |
| 22 | Ss. | Maricopa, | Nassau f/o | 59,934 |
| 24 | Ss. | Silverbrook, | Nassau f/o | 55,116 |
| 25 | Ss. | Sulphur | Nassau f/o | 19,268 |
| | | Bunker deliveries | | 53,523 |
| | | Total | | 380,981 |

**By Mexican Gulf Oil Co.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 4 | Ss. | Currier, | Galveston | 42,340 |
| 8 | Ss. | Ligonier, | Savannah | 30,222 |
| 11 | Ss. | Currier, | Port Tampa | 40,510 |
| 17 | Ss. | Torres, | Philadelphia | 44,655 |
| 18 | Ss. | Caloria, | Boston | 38,646 |
| 22 | Ss. | Currier, | Jacksonville | 40,896 |
| 23 | Ss. | Legonier, | Savannah | 30,015 |
| 29 | Ss. | Gulfstate, | Tompkinsville | 58,743 |
| | | Bunker deliveries | | 14,520 |
| | | Total | | 340,547 |

**By The Texas Company**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 22 | Ss. | Georgia, | Port Neches | 46,617 |
| 26 | Ss. | Virginia, | Providence and Bayonne | *52,986 |
| 31 | Ss. | Georgia, | Providence and Bayonne | *46,269 |
| | | Bunker deliveries | | 7,418 |
| | | Total | | 153,290 |

**By Pierce Oil Corp.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 10 | Ss. | F-Sulphur 6, | New Orleans | *39,787 |
| 16 | Ss. | Wm. Isom, | New Orleans | *29,830 |
| 25 | Ss. | Wm. Isom, | Baltimore | 28,908 |
| 30 | Ss. | W. L. Connelly, | New Orleans | *22,216 |
| | | Bunker deliveries | | 14,769 |
| | | Total | | 135,510 |

**By East Coast Oil Co.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 2 | Ss. | Caloria, | New Orleans | 24,068 |
| 7 | Ss. | Torres, | Galveston | 49,885 |
| | | Bunker deliveries | | 4,399 |
| | | Total | | 78,352 |

**By Empire Gas & Fuel Co.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 11 | Ss. | Virginia, | Port Arthur | 62,378 |

**By Mexican Atlas Petroleum Corp.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 16. | Ss. | Cassimir, | New York | 30,495 |
| | | Bunker deliveries | | 2,954 |
| | | Total | | 33,499 |

**By Mexican Oil Products Corp.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 16 | Ss. | Cassimir, | New York top off | 14,936 |

**FROM TUXPAM**

**By Mexican Eagle Oil Co., Ltd.**

| Aug. | Rig | Vessel | Destination | Bbls. |
|---|---|---|---|---|
| 16 | Ss. | San Gerardo, | Santos and Rio Janeiro | *103,409 |
| 16 | Ss. | San Gaspar, | Nassau f/o | *24,211 |
| 2 | Ss. | Java, | Valencia | 3,918 |
| | | Bunker deliveries | | 16,596 |
| | | Total | | 148,134 |

**AUGUST SUMMARY**

| | |
|---|---|
| From Tampico | 6,096,929 |
| Tuxpam | 148,134 |
| Total August, 1926 | 6,245,063 |
| Total August, 1925 | 6,546,343 |
| Decrease August, 1926 | 301,280 |

**AUGUST DIVISION**

| | |
|---|---|
| To United States | 3,874,426 |
| Cuba & W. Indies | 868,574 |
| United Kingdom | 287,983 |
| Mexican Coastwise | 273,647 |
| Canada | 230,167 |
| South America | 156,239 |
| Central America | 113,173 |
| Continent | 109,078 |
| Bunkers (to balance) | 331,776 |
| Total | 6,245,063 |

**CLASSES**

| | |
|---|---|
| Crude | 2,871,970 |
| Topped Crude | 2,595,792 |
| Distillates | 445,525 |
| Bunkers (to balance) | 331,776 |
| Total | 6,245,063 |

(*Denotes topped crude; †denotes distillates).

## OKLAHOMA'S USE OF GAS

Oklahoma has more cities and towns enjoying the advantages of natural gas than are possessed by any other state of the union except Ohio, Pennsylvania and West Virginia. There are only seven states which have more than 100 communities being served by natural gas. The states with the number of communities served are: Ohio, 395; Pennsylvania, 365; West Virginia, 278; Oklahoma, 169; Kansas, 167; New York, 125; Texas, 120.

# Keeping in Touch

From far away Mishun, near Bushire, South Persia, Ernest E. Kells, located there with the Anglo-Persian Oil Company, writes renewing his subscription for The Oil and Gas Journal and adds:

> "I always look forward to getting The Oil and Gas Journal when the mail comes. I would not be without it. I am always interested in the oil news at home and other places, and The Oil and Gas Journal keeps one in touch with all places."

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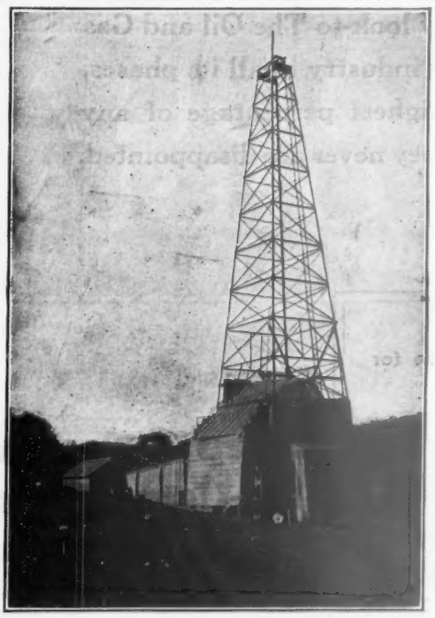

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# MANY QUESTIONS POUR INTO U. S. GEOLOGICAL SURVEY ON SODA ASH

By Charles E. Kern
*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C., Sept. 25.—A large variety of questions relating to the soda ash process for increasing the flow of oil wells are being received by the United States Geological Survey. Oil producers must realize what a privilege it is to be able to address their questions to the geological survey and to have them replied to by Dr. P. G. Nutting, geophysicist of the survey, the scientist whose research work suggested this method of oil recovery and under whose general supervision experimental work for that object has been conducted.

The letters coming to the survey relate not only to the application of the process but also to the supply of sodium carbonate which has been selected as the ideal chemical for the separation of the oil from the sand without injurious results to anything with which it comes into contact and without danger of contaminating the water supply to threaten the public health in the regions where this process is being put into practice.

### Oklahoman Interested

One oil producer from Tulsa, Okla., who recently made a visit to the Bradford Field, so that he might make personal inspection of what was being done writes to Doctor Nutting and propounds several interesting questions, as follows:

"I was very well received by the different operators in the Bradford Field and learned quite a lot about the flooding process.

"I had an opportunity to discuss the soda drive especially with Messrs. Koch, Kendall Refining Co., and Newby, Petroleum Reclamation Co. You have probably already heard that Mr. Koch, although the results of the soda drive are at least as favorable as those of the former water drives, could not find any trace of sodium carbonate in the water of his stimulated wells. Do you think it is possible that these oil field waters contain calcium carbonate precipitated? I remember that Mr. Van Mills also alluded to this possibility when I was in Washington.

### Theoretical Questions

"I have another theoretical question to put to you. I would like to know whether a water or soda-water drive will advance quicker in a sand which is drained by gravity and contains only oil kept by capillarity and surface adhesion of the sand grains? In my mind such a sand, because only part of the pore volume is filled by this capillary oil and adhesion oil, will allow a quicker progress of the water going through, and it is for this reason that I might expect that in an absolutely uniform sand of say 10 or 20 feet thickness the drive might advance quicker in the upper, more empty part of the sand than in the lower part containing much greater quantity of dead oil. Of course, if there are many shale breaks in the sands you will not have such a clear distinction between the area in the top part of the sand containing only capillary oil and the lower area where the pores are still entirely filled.

"Another question is: Why the water which is soluble in every kind of oil in an amount of .02 per cent according to your publications, is not always found in the refineries?

"The third question is: Whether you have already made experiments as to the suitability of the soda for the treatment of these very intricate mixtures of oil and water which we call emulsions and which have to be treated sometimes at great expense by electricity to separate the oil?

### Edgewater as Flooding Agent

"I would call your attention to another point and that is that it has been found in our East Indian oil fields and probably also in the American fields, that edgewater is always a very good flooding agent insofar that wells which have struck edgewater in the lower part of the structures almost always fail to show any appreciable amount of oil. You know that we geologists take it that the oil in a certain sand layer was originally spread in fine particles over its entire extent down to the centers of the synclines, and that it is collected later on along the crest of the structures as a result of the law of Archimedes."

To the foregoing letter Doctor Nutting replied:

"The water coming from recently drilled wells with the petroleum is thought to be connate or fossil water. Water put in adjacent wells would not get through within a year under ordinary conditions. No soda has yet come through probably because it has not yet had time, not because of chemical reactions. I have studied the soda-calcium chloride reaction in the laboratory at some length and cannot produce any harmful precipitation, although of course soda is used up.

### Water-Flooding Loose Sands

"There is no question but that water and water solutions will travel faster in sand merely wet with oil than in sand entirely filled with it. In my opinion this is the reason for lack of success in water flooding loose sands. The oil is nearly all by-passed and locked in by water admitted too rapidly. I do not think gravity is appreciably effective except perhaps in very slow drives in very coarse sand.

"Water dissolved in petroleum could undoubtedly be separated in refineries if desired and would always be found if sought. No gasoline or other product is entirely free from it, nor does it appear objectionable so long as it remains in solution.

"Soda assists in the separation of wax from sand and of petroleum from emulsions. An elevated temperature is, of course, the important factor but soda hastens the subsequent separation.

"I am greatly interested in your statement that wells drilled into edgewater do not strike appreciable oil. Have careful tests been made in wells known to be drilled into edgewater which has replaced oil? We are greatly interested in obtaining information on this point."

### Manufacturers Interested

A corporation conducting alkali works writes to the survey asking the personal views of Doctor Nutting as to the future of this method of recovery in other fields as well as in the Pennsylvania fields.

"We would also like to have an approximate ratio, if any exists, between the amount of soda ash used and the area of the sand which is being treated," the writer says. "In other words, any information which would permit a rough approximation of the possible consumption of soda ash which a general application of this process would involve."

Replying to the above, Doctor Nutting wrote the following:

"The first field tests of soda solutions for petroleum recovery were started just a year ago on the showing made by small scale laboratory experiments showing complete recovery. Two or three tons per well is the usual dose with three wells per acre. It has been put in over 60 wells to date. The soda ash used has been chiefly Diamond and Solvay, I believe. You should have little difficulty in getting into the market by the usual channels. However, with such a heavy consumption of soda ash in glass making the extra demand for petroleum recovery is not likely to be felt to any great extent."

"The oil field demand for soda ash is unlikely to become stabilized inside 10 or 20 years. Since the rate of advance of the solution is but 2 to 10 inches per day and the usual drive is 180 feet, even the first test will require over two years. A much longer period will be required to determine the value of the process and work out the field technic."

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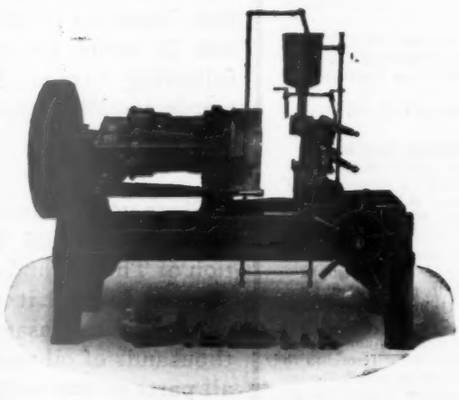

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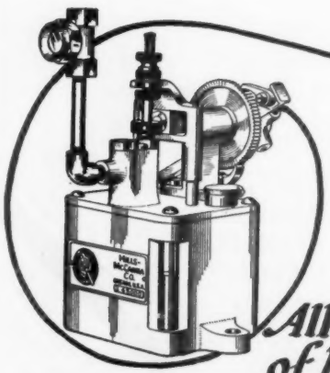

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at Chicago writes to say it has occurred to them that it might be possible to use Bentonite clay in the place of carbonate of soda to separate the oil from the sand because Bentonite clay is a very colloidal product.

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"Bentonite reacts somewhat with certain constituents of petroleum and, as you doubtless know, is used in certain phases of refining. It is, however, without action on silica and the silicates and is of no assistance in freeing petroleum from oil sands. Only salts of sodium and potassium combined with a weak acid are effective."

**No Restrictions by Government**

From Shreveport, La., came the following inquiry:

"I would like to know if it is possible that we may experiment with the soda process in this district, as I notice there is mention made of the patent rights being held by the United States Government.

"I am particularly interested in knowing just what the results have been and the method that has been followed in the use of the sodium carbonate solution.

"It is possible that we may want to experiment with this process on a large lease of ours where our experimental work would be very unlikely to either harm or help the property of our neighbors and on this particular lease we have no salt water in the sand.

"I should like to have the addresses of oil operators who have tried this process in the Bradford Field."

To the foregoing the following reply was sent:

"The article on page 39 of the July 29 number of The Oil and Gas Journal is a carefully prepared, authorized statement descriptive of the soda process and of results so far obtained. Very little can be added to this article.

"That patent application covering this process has not yet been acted upon but there is no apparent reason for not using the process freely for experimental work anywhere.

"An article is to appear shortly in The Oil and Gas Journal dealing with the introduction of the process in the Bradford Field and its applicability to other fields. (Published August 19, page 31).

"Some of the users of the soda process in the Bradford district are:

"A. E. Booth, president, Petroleum Producers Association of Northwestern Pennsylvania.

"W. C. Purple, Pressure Oil Co.

"Otto Koch, Kendall Refining Co.

"H. M. Ryder, Petroleum Reclamation Co.

who will doubtles be glad to tell you of their results so far."

**Asks About Sodium Sulphide**

"I am engaged in some chemical research for the cheaper production of anhydrous aluminum chloride," states another correspondent. "My contemplated process, if supplying the needs of a 20,000-bbl. oil refinery, will yield as a by-product an amount of sodium sulphate approximately equal to the present total daily output of the United States, I happen also to be an oil producer and naturally have noticed your sodium carbonate oil recovery proposition. It occurs to me that a vast quantity of unsalable by-product sodium sulphate might be reduced to sodium sulphide as a future substitute for sodium carbonate in flooding operations. Offhand I would say that sodium sulphide solution is somewhat more alkaline than sodium carbonate. In order to get some return from the by-product, the sulphide could, I think, be sold at much less than the price of carbonate and its equivalent of alkalinity would be still lower in price.

"Do your researches show the comparative value of sulphide and carbonate for flooding purposes?

"My oil production is in California and in Ontario, Canada. In the latter region, the production is from porous dolomitic limestone. Has the alkali solution the same selective wetting ten-


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dency (as against oil) for limestone as for silica sand?"

The following reply was given to the foregoing:

"In general terms, a water solution of any first group salt which hydrolizes to hydroxide (NaOH or KOH) is effective in driving petroleum from silica or from silicates. Cyanide, for example, functions as well as carbonate but it attacks oil and poisonous waste waters are not to be tolerated. Sulphide solutions also drive well, but attack both oil and iron piping and are far less satisfactory to ship and handle than carbonates.

"Sodium carbonate solutions drive petroleum from granulated marble very well but it is quite likely that in limestone formations solutions of common salt or even of weak acids would drive as well."

To a writer interested in the manufacture of soda ash, Doctor Nutting replied as follows:

"I have felt from the first that the demand for soda ash for petroleum recovery would never be such as to greatly affect the market price. A year ago it did not appear to me to be likely that the increased demand for that purpose would ever be felt in comparison with the enormous quantities used in glass making but during the year a great many carloads have been purchased and put in wells by but a few producers in a single field and a widespread interest has been aroused. Further laboratory experiments have indicated that soda may be successfully used even in doomed fields with briny edgewater, hence the process may be applicable in nearly every field.

"It is, of course, impossible to even estimate the probable demand for soda. I have gone over the matter with representatives of Diamond, Solvay, Cyanamide, Mattheson, and other manufacturers of alkali. Even though petroleum producers take half the soda made, with such an enormous manufacturing capacity and with an increase in demand so gradual it appears unlikely that the market will be ever seriously affected. The demand will always be sensitive to price fluctuations."

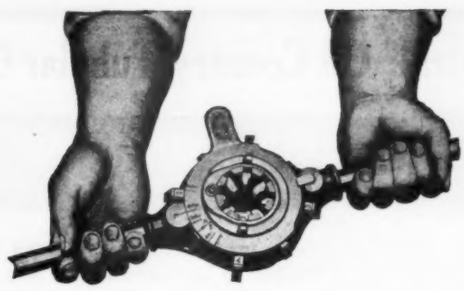
## Ventura Avenue Field Rivals Signal Hill Or Santa Fe Springs

To July, 1926, the production from Ventura Avenue Field has been about 17,000,000 bbls., and the total estimated production of the current year is 15,000,000 bbls. These figures, coupled with the proportion of producing to proven acreage, make Ventura potentially one of the greatest oil fields in the world, and place it in a class with Signal Hill and Santa Fe Springs.

The entire proven and potentially productive area of approximately 10,000 acres is in the hands of a few large companies, and the co-operation is such that there is no possibility of the wasteful and intensive drilling which was such a regrettable feature in these other fields. Thus a maximum of production is assured at a minimum of cost.

The lease holdings of the Associated Oil Co. cover 4,500 acres, of which about 1,000 acres is at present considered proven territory. This, says The Record, the company's publication, compares favorably with 1,394 acres for Signal Hill and 1,462 for Santa Fe Springs. The company's territory covers more than half of the probable productive portion of the structure, which is in an almost perfect closed anticline about 16 miles in length, and locations are already proven for about 50 wells in addition to the 17 now flowing and the 10 now drilling.

The oil occurs at depths from 3,800 to 6,100 feet, in sands extending to unknown depths. Completed operations indicate 2,800 feet minimum thickness of producing sand, which is considerably greater than that of Signal Hill and at least four times that of Santa Fe Springs. At present the average production per day of the Associated Oil Co.'s 17 flowing wells is slightly over 1,000

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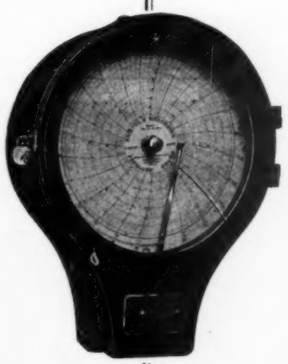

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bbls., with a miximum of 3,590 per day for Lloyd No. 26. An important additional feature in many ways is the gas production, running at present at about 46,000,000 feet per day or an average of 2,750,000 feet per day per well, this field being the largest gas producer in the State. From this casinghead gas, which in earlier days would have been wasted, the company secures about 30,000 gallons of gasoline per day. The dry gas is then available for fuel all over the lease and for sale to the Southern California Gas Co., which pipes it to Santa Barbara, Ventura and Los Angeles.

### High Gas Pressure

The high gas pressure is a particularly attractive feature of this field from the production standpoint. The wells operate on high gas pressures ranging from 200 pounds to 425 pounds, which is enough to raise the oil to gathering tanks placed at high points on the lease. From these tanks it is regular practice to fill the tank farm at the beach by gravity through 3 miles of pipeline. This elimination of pumping equipment and expense goes a long way toward compensating for the construction difficulties attendant upon the hillside locations.

From the point of view of the layman, the difficulties of location are of very great interest. Much of the success with which this feature of development has met is due to the work of Resident Engineer Edson, upon whom the responsibility of location has been placed.

Because of the high elevations of rig locations it has been necessary to hold almost uniformly to the greatest practical grade of 10 per cent. In most cases the roadways are 14 feet wide, except on the many turns, where it has been necessary to allow room for swinging trailers carrying 40-foot lengths of pipe, and over 3½ miles of roads have been literally carved out of the steep sides of the hills.

The construction program to date has required close to half a million yards of excavation through material ranging from consolidated sand and shale to soft sandstone. In the case of Lloyd No. 18 the road to the well site and excavation at the site required the moving of 40,000 yards and the completion of a 90-foot cut, which itself required some 18,000 yards of excavation.

In winter the drainage becomes a serious problem, but is successfully met by the installation of pipe underdrains at points where drainage would otherwise be trapped. This is very important because the regular oil field trucks weigh 10 tons loaded, and the heavy special trucks with trailers loaded with casing weigh over 20 tons.

### Water Supply

Another important construction feature is the water supply. The main storage tanks are placed at an elevation of about a thousand feet above the main city lines on Ventura Avenue and thus require nearly 600 pounds pressure at the pumps. From the high tank the water is piped and flows by gravity to all points of use. The consumption of water on the lease is about 10,000 bbls. per day.

The drilling program proper is handled by the Amazon Drilling Corp., under the general charge of Mr. Warren, but under the direct supervision of E. E. Hampton, superintendent for the Amazon corporation.

In a general way, the methods employed are those now common for deep and hard drilling in California. Practically all the work is done by the rotary method, using disc bits to a depth of about 3,500 feet, which is the usual cementing point of the 11-inch casing. Below this point the materials change frequently in character from very hard to very soft, thus requiring the use of different types of bits to suit conditions, chiefly the fish tail and the rock bits. In the earlier wells there was considerable trouble with twistoffs, but the introduction of better pipe has largely eliminated this annoyance.

There has been no special difficulty with water, the principal water sand being in the vicinity of 3,500 feet, below which the 11-inch casing is usually cemented. Surface water is shut off by


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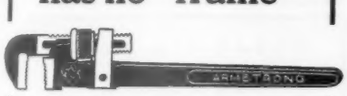


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cementing a full string of about 600 feet of 20-inch pipe.

**Rate of Drilling**

As in every field, the rate of drilling is different for every well, but averages about 40 feet per day, thus indicating the severe service to which the equipment is put. The wells vary in depth from 4,700 feet to 5,925 feet, with 10 of the 17 producers deeper than a mile. Practically all the drilling wells will also be a mile or more deep. These depths of course require very heavy equipment able to handle 4,000 feet of 11-inch casing, or a total weight of well over 100 tons, and all the new rigs are of steel.

The development feature, however, is the very heavy gas pressure. It is this that has limited the depth to about 6,000 feet, and it is only by special equipment that such high pressures can be handled. In the case of No. 4-A Lloyd, the gas pressure was so great as to burst the 1,500-pound hydraulic fittings. This well flowed 5,000,000 feet of gas per day for nearly two weeks before sanding up. A later well—No. 15 Lloyd—was held, with the 1,000-pound pressure gauge locked against the pin and an estimated gas pressure of at least 1,200 pounds. This particular well made 50,000,000 feet per day and required three 1¼-inch flow nipples to reduce the pressure to about 650 pounds for initial production of about 3,000 bbls.

In order to handle these pressures it is necessary at times to use a mud containing as high as 20 per cent of special material giving a weight of about 100 pounds per cubic foot as against 85 pounds for ordinary rotary mud.

## DISCUSSION AT A. S. E. MEETING

(Continued from Page 134)

od of operation or was the fault of the rectifier.

Mr. Skinner—The part that failed was the heater casting and not the rectifier proper. This part is supplied by the car manufacturer. It is located in the fan blast and, under normal conditions, will not be overheated. It is not surprising, however, that, under the extreme conditions of a dynamometer test with wide-open throttle, failure of this aluminum casting should occasionally occur, as exhaust manifold temperatures sometimes run as high as 1,800 degrees Fahrenheit.

R. R. Teetor[3]—So far as we can tell, piston rings have very little to do with oil dilution, as Mr. Skinner has explained. Oil dilution, however, has a good deal to do with the wearing of the piston rings, as we have found in running some extensive tests. There is no question of the advantage of keeping crankcase oil dilution down. The more perfectly it can be done, the longer will be the life of the engine. The wearing of the piston rings is indicative of every wearing part of the engine.

**Oil Temperatures**

Mr. Skinner—I should like to hear the experience of others regarding oil temperatures.

W. C. Wall—We have always tried, as a rule, to keep the oil temperature below 275 and near 210 degrees Fahrenheit. Under this condition, the rectifier seems to do better work.

With regard to the pour tests of oils, many good lubricating oils not only show a poor pour test but become almost solid at 18 degrees Fahrenheit. I agree with Mr. Skinner that an oil, when it becomes solid, cannot be sucked into an oil pump until it warms up slightly. Even in zero weather, it does not take long for the crankcase to get sufficiently warm so that the oil will flow and, in the meantime, some heavy oil in the oil lines is gradually getting warm, and that keeps the pressure up fairly well for a few minutes until the oil in the crankcase becomes sufficiently liquefied to be sucked into the oil pump.

A Member—What do you estimate the maximum temperature of the crankcase oil to be, say after a hard run or a long distance?

Mr. Wall—The maximum temperature

[3]Chief engineer, Indiana Piston Ring Co., Hagerstown, Ind.


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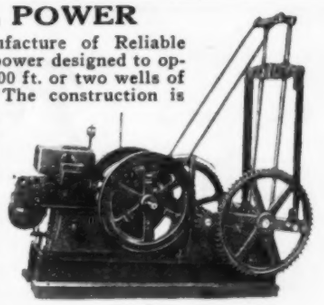

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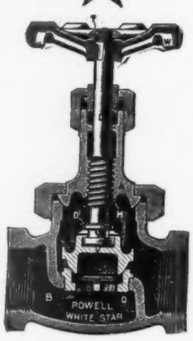


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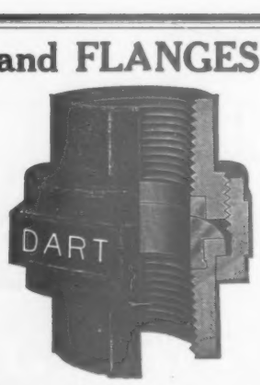


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of oil that I have ever measured in the crankcase itself, when the car was running on the road, was 210 degrees Fahrenheit; and we immediately began to redesign the crankcase because we realized that the engine was too hot. If the crankcase could remain at a temperature of 210 or 225 degrees Fahrenheit, you could get along pretty well without a rectifier, but you cannot keep the oil in the crankcase at any such temperature. In fact, the oil in an average crankcase, even in warm weather, seldom gets above 150 degrees Fahrenheit unless the engine is on the dynamometer.

Whenever a rectifier is used, the oil is heated, returns to the crankcase and raises the temperature of the oil there; but the amount that goes through the rectifier is so small and the amount of heat increase so slight in comparison with the heat that the oil receives from the cylinder walls, the bottom of the pistons and the cylinders that the greatest difference in temperature I have ever encountered from rectifier heating was considerably less than 10 degrees Fahrenheit.

### Sulphurous Acid

A Member—Where does the sulphurous acid in the crankcase come from?

Mr. Wall—Very little of it comes from the lubricating oil. Most of it comes from the fuel. In other words, the sulphur forms sulphur dioxide, which combines with the water to form sulphurous acid. Sulphric acid is seldom formed because it is very difficult to change sulphurous into sulphuric acid; but sulphurous acid is sufficient to etch steel.

A Member—You think that it is in the gasoline?

Mr. Wall—Without any question, it is in the gasoline.

J. M. Crawford[4]—It is pretty well proved that it comes from the fuel, because in Birmingham, where benzol with high sulphur content is commonly used, there is more etching of timing chains than in any other place in this country. I am wondering whether the action of drawing the gasoline from the retorts has a tendency to pull oil through with the gasoline and deposit it on the spark plugs, on account of the plugs being located in the path of the incoming gasoline, and causing undue fouling of the plugs in cold weather.

Mr. Skinner—I think that can be answered by the fact that the oil mileage invariably increases. In experimental installations we have used an additional receptacle to take care of any oil that might be carried into the intake manifold from the rectifier. In 1,000 miles of operation, we got about 60 cc. of fluid, of which 85 per cent was fuel.

Mr. Crawford—Was more sucked over in cold weather than in warm weather?

Mr. Skinner—We can note absolutely no difference. In fact, we have just finished a test in zero weather during the last 10 days. Regarding the heat of crankcase oil, in a test in California, we placed a thermocouple in the oil pan and found that in summer the oil reaches 240 degrees Fahrenheit. This was due primarily to the heat from the clutch bands being transferred into the oil.

A Member—Do you think it possible to turn some of that oil into gas by evaporation?

### Flash Discussed

Mr. Skinner—I believe that it is possible to do so with low flash oil. Engineers seem to have overlooked the fact that flash has a great deal to do with oil. We have made tests that show that, if the oil can be kept where it should be, the consumption of oil will not be nearly so much. In a test with a car having dilution of 20 to 25 per cent, the oil mileage was about 400 or 500 miles per gallon. When the flash was increased to where it should be, the oil mileage was more than doubled.

A Member—Is not the gasoline that slips by the piston rings the slow burning part and the heavy ends? If that is true, what is gained by throwing that

[4]Chief engineer, Auburn Automobile Co., Auburn, Ind.


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gasoline back into the intake manifold and trying to burn it again?

Mr. Wall—The percentage of gasoline distilled out of a sample of crankcase oil increases very materially as the temperature increases; in other words, there is considerably more of the heavy part of the fuel in the oil than of the lighter part. For instance, in a particular sample of crankcase oil, the dilution obtained, when the sample was analyzed by heating it to 300 degrees Fahrenheit, was 0.00 per cent; from 300 to 400 degrees Fahrenheit, it was 4.50 per cent; and from 400 to 450 degrees Fahrenheit, 12.00 per cent. As only a small percentage of the gasoline used goes by the piston rings and only a small percentage of this amount goes through the oil rectifier at one time, the amount of gasoline sucked into the carburetor from the rectifier is comparatively small in proportion to the amount of gasoline used by the engine; and, answering Mr. Zartman's question, I would say that the heavy gasoline sucked from the rectifier into the carburetor is just as likely to be burned in the engine a second time as is any of the heavy portion of the fuel. We know that a great deal of gasoline having an endpoint between 350 and 450 degrees Fahrenheit must be burned. If it is not, we might as well throw away a large part of the gasoline, because a large percentage of it has that endpoint.

Mr. Coulombe—Gasoline, even if it has a low endpoint, must be in a gaseous form when it leaves the rectifier and, if it reaches the cylinder in that state, is much more likely to burn than it was in the first place.

O. C. Berry[3]—It seems strange to me that water diluent has not been emphasized more than it has been. As I understand the subject, it seems that a little water in the oil is much more dangerous under cold weather conditions than a great deal of kerosene. In many cars, if as much as 3 or 4 per cent of water is present in the oil, the screen will soon become covered with little crystals of ice and lubrication will cease. Failure of the lubricating system, due to ice, is much more dangerous than is the presence in the lubricant of even very large amounts of the heavy ends of the fuel.

One of the first things noticeable in the devices that have been described is the almost entire disappearance of water in the oil. To balance the statement I have previously made with regard to hoping some day to see a perfect rectifier that would have no tendency to interfere with the carburetion, I have seen engines with rectifiers properly installed which idled beautifully. The worst trouble comes when the engine does not naturally idle well.

[3]M. S. A. E.—Chief engineer, Wheeler-Schebler Carburetor Co., Inc., Indianapolis.

## PANHANDLE GEOLOGY

In the Bulletin of the American Association of Petroleum Geologists, an article on the oil and gas fields of the Texas Panhandle by C. Max Bauer, chief geologists of the Midwest Exploration Co., states that the anticline, which is approximately 100 miles long is caused in his opinion, mainly by compacting of Permian sediments over buried mountains of igneous and metamorphic rocks. Oil is found in two formations on the north flank.

## MEXICAN OIL TAXES

A decree has been issued by President Calles whereby oil production taxes in Mexico will go 90 per cent to Federal government and 10 per cent to various states wherein oil is obtained. Hitherto only such states as possessed refineries obtained this advantage.

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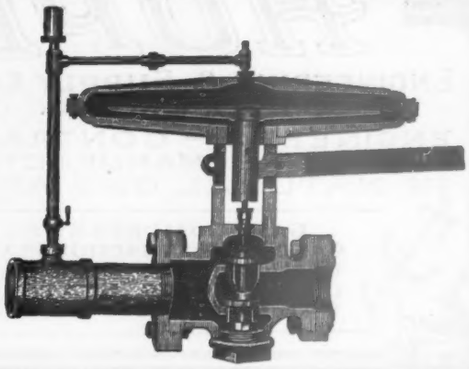

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## PUBLIC LAND VIEWS OF SECRETARY WORK

Speaking before the Western States Convention at Denver, Colo., Hubert Work, Secretary of the Interior, said in part:

"While much of the gold, silver, copper, lead and zinc lands, once owned by the Government, has passed into the hands of private individuals, there are undoubtedly large deposits of these ores remaining in the public domain. These minerals can be mined by individuals, oil and coal can not to advantage. The prospector has become a geologist or associate one but wildcatting is being prosecuted continuously leading to the conclusion that much petroleum still remains in the public estate uncaptured, the exact amount of which is not ascertainable. There are also large quantities of natural gas.

"Oil and gas lands, the title to the minerals of which are vested in the United States, returned $8,384,718 in royalties last year. Last year the United States Government received only $842,845 of the total collected from oil and gas royalties, while $3,142,447 was returned to the states and $4,399,426 was turned over to the Reclamation Fund.

"The mineral industry is vitally interested in whether the remaining public lands with their mineral contents are administered by the National Government or by the states. Within each state there would then be a different law with which applicants for mineral leases would have to comply. This would result in a multiplicity of laws with which mining industry would have to contend, instead of one law applying everywhere.

"The present policy of developing and disposing of the mineral resources in the public lands, is proving out. Discretion, however, should be lodged in the department to withhold from lease where and when the market conditions are such that it would not be advisable to throw new or increased production into the channels of trade. The Government would then be able to develop these resources only as needed for use."

### TO TEST MEXICAN LEASES

NEW YORK, Sept. 25.—After cessation of drilling operations for almost a year, Mexican Seaboard Oil Co. is preparing to drill 10 wells in the Cacalilao district. The work will be to test certain acreage so that unproductive leases may be dropped and leasing expenses cut down. The work will be in Cacalilao, Tanchecuin and Corcovado. In addition, activity is being increased in Toteco with the same purpose. Two rigs will be kept operating in heretofore unexplored areas.

### OFFERS GEOLOGICAL COURSE

LOS ANGELES, Calif., Sept. 25.—Included in the curriculum of 140 evening college lecture and laboratory courses offered by Metropolitan College, Los Angeles, is a course in Petroleum Geology, designed to be of special interest to the potential petroleum engineer, but also of interest to all those in any way interested in the oil industry.

### OIL IN CZECHOSLOVAKIA

The Czechoslovak Oil Co. "Appolo," Refineria Mineralnych Olejov uc. spol. Bratislava, which owns an oil field and refinery near Hodonin Moravia, has closed a contract with the government of Czechoslovakia, according to the terms of which the company is authorized to prospect for oil and exploit 6,000 hectares of land adjoining their present holdings.

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Smith Separator Co.

**Controllers—Temperature—**
Foxboro Co., Inc.

**Conveying & Elevating Machinery**
Brady Conveyors Corp.

**Conveyors—Bucket and Belt—**
Brady Conveyors Corp.

**Conveyors—Pneumatic—**
Brady Conveyors Corp.

**Conveyors—Portable Belt—**
Barber-Greene Co.

**Cooling Towers—Atmospheric—**
Braun, C. F., & Co.
National Gas Products Co.

**Cordage—**
Bridgeport Machine Co.
International Supply Co.
Plymouth Cordage Co.

**Core Drilling—**
Longyear, E. J., Co.

**Core Drills—**
Elliott Core Drilling Co.

**Core Drills—Diamond—**
Longyear, E. J., Co.
Sullivan Machinery Co.

**Core Drills—Diamonds For—(See Diamonds for Core Drilling)—**

**Coring Tools—**
Reed Roller Bit Co.
Wilson Oil Tools Corp.

**Couplings—Flexible—**
Nuttall, R. D., & Co.
Victaulic Co. of America.

**Couplings—Plain End Pipe—**
Dayton Pipe Coupling Co.
Dresser, R. S., Mfg. Co.

**Couplings—Seamless Steel—**
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

**Couplings—Steel for Casing, Line Pipe, Drill Pipe and Tubing—**
Dayton Pipe Coupling Co.
Smith, A. O., Corp.

**Cracking Processes—**
Graver Corp.
Kellogg, M. W., Co.
Universal Oil Products Co.

**Crawler Treads—**
Belle City Mfg. Co.
Full Crawler Co.

**Crown Blocks—**
International Derrick & Equipment Co.
Lucey Mfg. Corp.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

**Cups—Composition—**
Williamsport Development Co.

**Cups—Leather—**
Auer, C. A.

**Cutters—Pipe—**
Borden Co.
Nye Tool & Machine Works.
Trimont Mfg. Co.

**Cylinders—Compressor—**
Hope Engineering & Supply Co.

**Cylinder Stocks—**
Barnsdall Refining Co.
Pure Oil Co.
Texas Company, The.

### D

**Dehydrating Process—**
Barnickel, Wm. S., Co.

**Dephlegmators—**
Graver Corp.
National Gas Products Co.
Newton Process Mfg. Co.
Smith, A. O., Corp.

**Depletion Reports—**
American Appraisal Co.

**Derricks—Steel—**
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

**Derricks—Turnbuckle—**
National Turnbuckle Derrick Co.

**Diamonds—For Core Drilling—**
Patrick, R. S.

**Die Heads—Automatic Screw Cutting—**
Landis Machine Co.

**Die Heads—Bolt Threading—**
Bignall & Keeler Mch. Works.
Landis Machine Co.

**Die Heads—Stationary Pipe Threading—**
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.

**Diesel Engines (See Engines)—**

**Dies—Pipe Threading—**
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.
Nye Tool & Machine Works.

**Direct Driven Pumps (See Pumps)**

**Disc Bits (See Bits—Disc)—**

**Ditchers—Pipe Line—**
Barber-Greene Co.
Buckeye Traction Ditcher Co.

**Draw Works—**
Lucey Mfg. Corp.
National Supply Co.
Titusville Iron Works Co.

**Drillers Hose (See Hose)—**

**Drilling & Fishing Tools—**
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Brown Tool Co., Inc.
Burns Tool Co.
Continental Supply Co.
Cushing, Tim, Tool & Supply Co.
Emsco Derrick & Equip. Co.
General Oil Tools Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Murray Tool & Supply Co.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

**Drilling Engines—(See Engines)—**

**Drilling Equipment—**
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Star Drilling Machine Co.

**Drilling Machines—**
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

**Drilling Tools—(See Drilling and Fishing Tools)—**

**Drills—Portable Air—**
Chicago Pneumatic Tool Co.

**Drive Shoes—**
Bartlesville Supply Co.
Larkin & Co.

**Drops and Seats—**
Norris Brothers, Inc.

**Drums (See Barrels)—**

**Dynamos—**
Westinghouse Electric & Mfg. Co.

### E

**Ejectors—**
Penberthy Injector Co.

**Electrical Equipment—**
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

**Electric Drilling Equipment—**
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

**Electric Steel Castings (See Castings—Electric—Steel)—**

**Elevators—Casing and Tubing—**
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

**Elevators—Rod—**
B. & A. Specialty Co.
D. & B. Pump & Supply Co.
Dunn Mfg. Co.

**Enamels—**
Arco Company, The.
Detroit Graphite Co.
Sherwin-Williams Co.

**Engineers—Consulting and Contracting—**
Brooks Engineering Corp.
Hope Engineering & Supply Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Petroleum Engineering Corp.
Power Specialty Co.
Westcott & Greis.
Widdell Engineering Co.

**Engineers—Fire Protection—**
Brooks Engineering Corp.
Foamite-Childs Corp.

**Engineers—Oil Buildings—**
Austin Co.
International Derrick & Equipment Co.

**Engineers—Oil Mining—**
Ranney Oil Mining Co.

**Engineers—Oil Treating—**
Barnickel, Wm. S., & Co.
National Gas Products Co.

**Engines—Crude Oil—**
Continental Supply Co.
Western Machinery Co.

**Engines—Diesel—**
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.

**Engines—Drilling—**
Ajax Iron Works.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Brownell Co., The.
Buda Co.
Buffalo Gasolene Motor Co.
Clark Bros. Co.
Climax Engineering Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.

**Engines—Gas—**
Bessemer Gas Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Climax Engineering Co.
Continental Supply Co.
Cooper, C. & G., Co.
Emsco Derrick & Equip. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M., Co.
Marion Mch., Fdy. & Supply Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.

**Engines—Gasoline—**
Buda Co.
Buffalo Gasolene Motor Co.
Climax Engineering Co.
Continental Motors Corp.
Fairbanks-Morse & Co.
Hercules Motor Corp.
International Harvester Co. of America.
Waukesha Motor Co.
Western Machinery Co.

**Engines—Oil—**
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-Morse & Co.
Franklin Valveless Engine Co.
Ingersoll-Rand Co.
International Harvester Co. of America.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Power Mfg. Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.

**Engines—Semi-Diesel, Oil—**
Chicago Pneumatic Tool Co.

**Engines—Steam—**
Ajax Iron Works.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.

**Evaporators—**
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

## F

**Fabricators for Gasoline Plants and Refineries—**
National Gas Products Co.
Stearns-Roger Mfg. Co.

**Filters—Oil—**
Burt Mfg. Co.

**Fire Extinguishers—**
Foamite-Childs Corp.

**Fire Extinguishers — Recharge Service—**
Foamite-Childs Corp.

**Fishing Tools (See Drilling and Fishing Tools)—**

**Fittings—Dropped Forged Steel—**
Vogt, Henry, Machine Co.

**Fittings—Forged Steel—**
Central Forging Co.

**Fittings—Malleable & Cast Iron—**
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Walworth Co.

**Fittings—Pipe—**
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
Victaulic Co. of America.
Walworth Co.

**Fittings—Pipe Acid Proof—**
Duriron Company.

**Fittings—Steel—**
Dayton Pipe Coupling Co.
Kerotest Mfg. Co.
Ohio Steel Foundry Co.
Walworth Co.

**Flanges—Brass, Iron and Steel—**
Jefferson Union Co.
Metric Metal Works.
Walworth Co.

**Flange Unions—**
Dart, E. M., Mfg. Co.
Gaso Pump & Burner Mfg. Co.

**Flashlights—**
National Carbon Co.

**Floating Roofs and Decks—**
Chicago Bridge & Iron Works.

**Floodlights—**
Pyle-National Co.

**Forging Billets—**
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

**Forgings—**
Champion Machine & Forging Co.

**Fuel Oil (See Oil—Fuel)—**

**Fullers Earth—**
Sinclair Refining Co.

## G

**Gas Holders—**
Chicago Bridge & Iron Works.

**Gaskets—**
McCord Radiator & Mfg. Co.

**Gaskets—Fibre—**
Durabla Mfg. Co.
Garlock Packing Co.

**Gas Masks & Safety Appliances—**
Mine Safety Appliance Co.

**Gasoline—**
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

**Gasoline—Natural—**
Chestnut & Smith Corp.
National Gas Products Co.
Skelly Oil Co.
Warren Petroleum Co.

**Gasoline Plant Equipment—**
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Widdell Engineering Co.

**Gas Regulating Casinghead—**
Davis, G. M., Regulator Co.
National Gas Products Co.

**Gas Scrubbers—**
National Gas Products Co.
Newton Process Mfg. Co.

**Gauge Glass—High Pressure—**
Durabla Mfg. Co.

**Gauge Poles—**
Marsh Gauge Pole Co.
Missouri Woodworking Co.

**Gauges—Automatic Tank—**
Brooks Engineering Co.

**Gauges—Draft—**
Brown Instrument Co.

**Gauges—Oil—**
Penberthy Injector Co.

**Gauges—Pressure and Vacuum—**
Bristol Co.
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Metric Metal Works.

**Gauges—Test—**
Equtable Meter & Mfg. Co.
Metric Metal Works.

**Gear Driven Pumps (See Pumps)**

**Gears—Cut—**
Nuttall, R. D., & Co.

**Gears—Reduction—**
Emsco Derrick & Equip. Co.
Nuttall, R. D., & Co.

**Gears—Reverse—**
Emsco Derrick & Equip. Co.

**Generators—**
Westinghouse Electric & Mfg. Co.

**Generators—Acetylene—**
Oxweld Acetylene Co.

**Generators—Turbine—**
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

**Glassware—Chemical for Laboratory Use—**
Illinois Glass Co.

**Governors—**
Equitable Meter & Mfg. Co.
Gardner Governor Co.

**Governors—Boiler Feed—**
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

**Grating—Steel—**
Blaw-Knox Co.

**Grey Iron Castings (See Castings)**

## H

**Hammers—Chipping and Calking Pneumatic—**
Chicago Pneumatic Tool Co.

**Hammers—Riveting Pneumatic—**
Chicago Pneumatic Tool Co.

**Hangers—Iron and Steel—**
Continental Supply Co.
Dodge Mfg. Corp.

**Hangers—Tubing—**
Hercules Tool Co.

**Hatches—Gauges and Thief—**
Oil Conservation Engineering Co.

**Heat Exchangers—**
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

**Heat Interchangers—Fluid—**
Braun, C. F., & Co.
Ross Heater & Mfg. Co., Inc.

**Hoists—Pneumatic, Geared and Universal—**
Chisholm-Moore Mfg. Co.
Yale & Towne Mfg. Co.

**Hoists—Portable—**
Chisholm-Moore Mfg. Co.
Ford Chain Block Co.
Sullivan Machinery Co.
Wright Mfg. Co.
Yale & Towne Mfg. Co.

**Hooks for Rods and Tubing—**
B. & A. Specialty Co.
Dunn Mfg. Co.

**Hose—**
Fenwick-Reddaway Mfg. Co.

**Hose—Drillers—**
Goodrich, B. F., Rubber Co.
United States Rubber Co.

**Hose—Oil Suction and Discharge**
Goodrich, B. F., Rubber Co.
United States Rubber Co.

**Hose—Rubber—**
Goodyear Tire & Rubber Co.
United States Rubber Co.

**Hypochlorite of Lime—**
Mathieson Alkali Works, Inc.

## I

**Injectors—**
Penberthy Injector Co.

**Inspectors—Pipe—**
Hunt, Robert W., Co.

**Insulation Materials—**
General Insulating & Mfg. Co.
Johns-Manville, Inc.

**Insurance—Fire—**
Oil Insurance Association.

**Insurance—Tornado—**
Oil Insurance Association.

**Iron—Ingot—**
American Rolling Mill Co.

## J

**Jacks—Hydraulic—**
Bridgeport Machine Co.

**Jacks—Lifting—**
Templeton, Kenly & Co., Ltd.

**Jacks—Pumping—**
American Mfg. Co. of Texas.
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Norris, W. C.
Spang & Co.

**Jars—**
Arbon, Paul, & Co.
Bridgeport Machine Co.
Spang & Co.

**Jar Steel—**
Andrews Steel Co.
Heppenstall Forge & Knife Co.

## K

**Kerosene—**
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

## L

**Lacquers—**
Arco Company, The.
Sherwin-Williams Co.

**Lanterns—Electric—**
Delta Electric Co.

**Lead and Mixed Metal Products—**
Eagle-Picher Lead Co.
National Lead Co.

**Lead in Oil—**
Eagle-Picher Lead Co.
National Lead Co.

**Lead Wool and Containers—**
Eagle-Picher Lead Co.

**Lighting Equipment—**
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

**Litharge—**
Eagle-Picher Lead Co.
National Lead Co.

**Loaders—Trucks—**
Barber-Greene Co.

**Long Distance Telephone—**
American Telephone & Telegraph Co.

**Lubricating Devices—**
McCord Radiator & Mfg. Co.

**Lubricators—**
Ajax Iron Works.
Lunkenheimer Co.

**Lubricators—Force Feed—**
Hills-McCanna Co.
McCord Radiator & Mfg. Co.
Manzel Brothers Co.

## M

**Machine Tools—**
Ryerson, Jos. T., & Sons, Inc.

**Manholes—Tank—**
Brooks Engineering Corp.

**Manifolds—**
Reid, Joseph, Gas Engine Co.

**Meters—Gas—**
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Greis.

**Meters—Electric—**
Brown Instrument Co.

**Meters—Gasoline—**
Pittsburgh Meter Co.

**Meters—Oil—**
Pittsburgh Meter Co.

**Molded Goods—Rubber—**
Garlock Packing Co.
Goodyear Tire & Rubber Co.

**Motors—Electric—**
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

**Motors—Gasoline (See Engines—Gasoline)—**

## N

**Naphtha—**
Pure Oil Co.

**Natural Gasoline (See Gasoline—Natural)—**

**Natural Gasoline Plant Equipment—**
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.
Westcott & Greis.

**Nitrogen—**
Linde Air Products Co.

**Nozzles—Spray—**
Power Plant Equipment Co.

## O

**Oil and Gas Pipe Line Construction—**
Hope Engineering & Supply Co.

**Oil Burners (See Burners—Oil)—**

**Oil Field Equipment—**
Baker Casing Shoe Co.
Bridgeport Machine Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Steel Construction Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.

**Oil—Fuel—**
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

**Oil—Gas—**
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

**Oil—Lubricating—**
Barnsdall Refining Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Texas Company, The.

**Oil—Tractor—**
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Skelly Oil Co.

**Oiling Devices—**
Lunkenheimer Co.

**Oil Meters (See Meters)—**

**Oil Piping Equipment (See Fittings)—**

**Oil Reclaiming Process—**
Barnickel, Wm. S., & Co.

**Oil Well Cementing—**
Halliburton Oil Well Cementing Co.

**Oil Well Tools—**
D. & B. Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.

**Over Shots—**
Reed Roller Bit Co.
Regan Forge & Engineering Co.

**Oxygen—**
Linde Air Products Co.

## P

**Packer Release—**
Acme Fishing Tool Co.

**Packers—**
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Meier, H. C., Lubricating Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.

**Packing—**
Crane Packing Co.
Durabla Mfg. Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.

**Packing—Metallic—**
Crane Packing Co.
Garlock Packing Co.

**Paints—**
Aluminum Co. of America.
American Asphalt Paint Co.
Arco Company, The.
Detroit Graphite Co.
Dixon, Joseph, Crucible Co.
Du Pont de Nemours, E. I. & Co., Inc.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Hill, Hubbell & Co.
National Lead Co.
Sherwin-Williams Co.
St. Louis Surfacer & Paint Co.

**Pipe—Cast Iron—**
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

**Pipe—Lead Chemical and Antimonial—**
Eagle-Picher Lead Co.
National Lead Co.

**Pipe—Steel—**
Central Tube Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Sons, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Taubman Supply Corp.
Wheeling Steel Corp.

**Pipe—Wrought Iron—**
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
South Chester Tube Co.
Superior Tube Co.
Taubman Supply Corp.

**Pipe and Nipple Threading Machines—**
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Standard Engineering Co.

**Pipe Clamps (See Clamps—Pipe)**

**Pipe Grips—**
Larkin & Co.

**Pipe Headers—**
National Tube Co.
Newton Process Mfg. Co.

**Pipe Line Coatings—**
Hill, Hubbell & Co.

**Pipe Line Construction Tools—**
National Transit Pump & Machine Co.

**Pipe Line Equipment—**
Gaso Pump & Burner Mfg. Co.

**Pipe Screwing Machines—**
Buckeye Traction Ditcher Co.

**Pipe Straightening Machines—**
W-K-M Co., Inc.

**Pipe Suspension Device—**
Stearns-Roger Mfg. Co.

**Pipe Threaders—Power—**
Williams Tool Corp.

**Pipe Tools—**
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.
Ridge Tool Co.
Walworth Co.

**Piping—Fabricated—**
Midwest Piping & Supply Co.

**Piping—Hard Rubber—**
United States Rubber Co.

**Piping—Steel & Iron—**
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.

**Pistons—**
Guiberson Corp.
Hepenstall Forge & Knife Co.

**Pistons—Expansion—**
Wilson Oil Tools Corp.

**Pistons—Suish Pump—**
Guiberson Corp.

**Plugs—Bottom Water—**
Guiberson Corp.

**Pre-Heaters—**
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

**Preservatives—Asphalt—**
American Asphalt Paint Co.

**Pulleys—Wood, Iron and Steel—**
Continental Supply Co.
Dodge Mfg. Co.

**Pulling Machines—**
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

**Pumpers—Long Stroke—**
Farley Machine Co.

**Pumping and Pulling Motors—Electric—**
Westinghouse Electric & Mfg. Co.

**Pumping Equipment—**
American Well Works.
Axelson Machine Co.
Byron Jackson Pump Mfg. Co., Inc.
D. & B. Pump & Supply Co.
Farley Machine Co.
Goulds Pumps, Inc.
Jones, S. M., Co.
Myers, F. E., & Bros., Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.

**Pumping Gear Units—**
Nuttall, R. D., & Co.

**Pumping Powers—**
Bessemer Gas Engine Co.
Buda Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

**Pumps—Acid Proof—**
Duriron Company.

**Pumps—Boiler Feed—**
Axaj Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Goulds Pumps, Inc.
Oil Well Supply Co.
Smith Separator Co.

**Pumps—Centrifugal—**
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Goulds Pumps, Inc.
Smith Separator Co.
Worthington Pump & Machinery Corp.

**Pumps—Direct Driven—**
Bessemer Gas Engine Co.
Smith Separator Co.

**Pumps—Electric—**
Prescott Co.
Smith Separator Co.

**Pumps—Fuel Oil Service—**
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Smith Separator Co.

**Pumps—Fuel Oil Transfer—**
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.

**Pumps—Gasoline and Oil for Filling Stations—**
Gilbert & Barker Mfg. Co.

**Pumps—Gear Driven—**
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.
Smith Separator Co.

**Pumps—Hot Oil—**
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Goulds Pumps, Inc.
Smith Separator Co.

**Pumps—Pipe Line—**
Byron Jackson Pump Mfg. Co., Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

**Pumps—Portable—**
Gaso Pump & Burner Mfg. Co.

**Pumps—Power—**
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Prescott Co.
Smith Separator Co.
Waukesha Motor Co.

**Pumps—Refinery—**
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Smith Separator Co.

**Pumps—Rotary—**
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.

**Pumps—Sand—**
Bridgeport Machine Co.
Larkin & Co.
Smith Separator Co.

**Pumps—Slush—**
Gardner Governor Co.

**Pumps—Steam—**
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Smith Separator Co.

**Pumps—Suction—**
Gaso Pump & Burner Mfg. Co.

**Pumps—Vacuum—**
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.

**Pumps—Water—**
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Prescott Co.
Smith Separator Co.

**Pyrometers—**
Brown Instrument Co.
Republic Flow Meters Co.

## R

**Ratchet Pipe Cutters—**
Toledo Pipe Threading Machine Co.

**Ratchet Pipe Threaders—**
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

**Ratchet Reamers—**
Nye Tool & Machine Works.

**Ratchet Stocks and Dies—**
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

**Receiving Boxes—**
Reid, Joseph, Gas Engine Co.

**Recorders—Differential Pressure—**
Equitable Meter & Mfg. Co.
Metric Metal Works.

**Refinery Equipment—**
American Radiator Co.
Blaw-Knox Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works.
Graver Corp.
Grisconi-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Meehan Foundries.
Smith, A. O., Corp.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.
Widdell Engineering Co.

**Refractories—Furnace, Stills and Baffles—**
National Gas Products Co.

**Refrigerating Machinery—**
Carbondale Machine Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

**Regulators—**
Fisher Governor Co.
Gilfillan Machine Works.
Smith Separator Co.

**Regulators—Gas—**
Chaplin-Fulton Mfg. Co.
Davis, G. M., Regulator Co.
Equitable Meter & Mfg. Co.
Fisher Governor Co.
Metric Metal Works.
National Gas Products Co.
Smith Separator Co.

**Rental Service—**
Bridgeport Machine Co.

**Reversible Clutches—**
Bessemer Gas Engine Co.

**Rig Irons—**
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

**Rigs—Drilling, All Steel—**
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

**Rigs—Portable Drilling—**
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

**Rod Guides—**
Meier, E. C., Lubricating Co.

**Rods—Gauge—**
Missouri Woodworking Co.

**Rods—Polish—**
Jones, S. M., Co.

**Rods—Pull—**
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.

**Rods—Sucker—**
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.

**Rods—Valve—**
Jones, S. M., Co.

**Roofing—Asbestos—**
Johns-Manville, Inc.

**Roofing—Galvanized Iron—**
American Rolling Mill Co.

**Rope Socket Metal—**
Eagle-Picher Lead Co.

**Rope—Manila—**
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.

**Rope—Wire—**
Ajax Rope Co., Inc.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Wickwire-Spencer Steel Corp.
Leschen, A., & Sons, Rope Co.
Williamsport Wire Rope Co.

**Rotary Bit Steel—**
Andrews Steel Co.
Heppenstall Forge & Knife Co.

**Rotary Drilling Equipment—**
Emsco Derrick & Equip. Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

**Rotary Lines (See Rope—Wire)—**

**Rotary Pest—**
Reed Roller Bit Co.

**Rotary Tool Joints—**
Bartlesville Supply Co.
Hughes Tool Co.

**Rust Preventatives—**
Dearborn Chemical Co.
Eagle-Picher Lead Co.

## S

**Sand Lines—Manila—**
Ajax Rope Co., Inc.
Plymouth Cordage Co.

**Sand Lines—Wire—**
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Wickwire-Spencer Steel Corp.

**Screens—Oil Well—**
Layne & Bowler Co.

**Screens—Water Well—**
Layne & Bowler Co.

**Screws Temper—**
Burns Tool Co.

**Securities—Oil—**
Pforzheimer, Carl H., & Co.

**Separators—Centrifugal—**
Miller, Max B., & Co.

**Separators—Gas and Oil—**
Smith Separator Co.

**Separators—Steam—**
Volz Engineering Equipment Co.

**Sheet Lead—Chemical and Antimonial —**
Eagle-Picher Lead Co.

**Sheets —Corrugated, Black and Galvanized—**
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Byerson, Jos. T., & Son, Inc.
United Alloy Steel Corp.

**Sheets—Iron—**
American Rolling Mill Co.

**Sheets—Steel—**
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Sheffield Steel Corp.
United Alloy Steel Corp.

**Shingles—Asbestos—**
Johns-Manville, Inc.

**Sliding—Galvanized Iron—**
American Rolling Mill Co.

**Sleeves—**
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

**Sleeves—Split—**
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

**Smoke Stacks—**
Donovan Boiler Works.

**Snuffers—Fire—**
Simplex Equipment Co.

**Sockets—**
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

**Sockets—Sucker Rod—**
Guiberson Corp.

**Sockets—Swivel—**
Arbon, Paul & Co.

**Sockets—Wire Rope—**
Chicago Steel Foundry Co.

**Soda Ash—**
Mathieson Alkali Works, Inc.

**Soda—Caustic—**
Mathieson Alkali Works, Inc.

**Solders—Bar and Wire—**
Eagle-Picher Lead Co.
Hoyt Metal Co.

**Spark Plugs—**
Mosler Metal Products Corp.

**Spears—**
Acme Fishing Tool Co.
Brown Tool Co., Inc.

**Sprockets—Power Transmission—**
Ajax Iron Works
Chain Belt Co.

**Stands—Vise—**
Nye Tool & Machine Works

**Steel—All Kinds—**
Ryerson, Jos. T., & Son, Inc.

**Steel—Alloy—**
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.

**Steel—Bit—**
Central Steel Co.
United Alloy Steel Corp.

**Steel—Hot Rolled Strip—**
Central Steel Co.

**Steel—Special—**
Andrews Steel Co.
Central Steel Co.
United Alloy Steel Corp.

**Steel Fabricators—Structural—**
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

**Steel Pitmans—**
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

**Steel Plate Construction—**
Chicago Bridge & Iron Works
Graver Corp.
Kaw Steel Construction Co.
Pennsylvania Engineering Works
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.

**Steel Wheel and Tug Rims—**
International Derrick & Equipment Co.

**Still Insulation—**
Celite Products Co.

**Stills—**
Blaw-Knox Co.
Graver Corp.
Kaw Steel Construction Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Smith, A. O., Corp.
Vogt, Henry, Machine Co.
Widdell Engineering Co.

**Stocks and Dies—**
Borden Co.
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.

**Stuffing Boxes—**
Axelson Machine Co.
Kansas City Hay Press Co.

**Sulphuric Acid—**
Eagle-Picher Lead Co.

**Superheaters—Steam—**
Power Plant Equipment Co.

**Swabs—**
Arbon, Paul, & Co.
Burt Corporation
Guiberson Corp.
Simplex Equipment Co.

**Swedge Nipples—**
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

**Swing Line Equipment—**
Brooks Engineering Corp.

**Swivels—**
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

## T

**Tachometers—**
Brown Instrument Co.

**Tank Equipment—**
Brooks Engineering Corp.
Oil Conservation Engineering Co.

**Tank Insulation—**
Celite Products Co.

**Tanks—Bolted—**
Butler Mfg. Co.
Columbian Steel Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

**Tanks—Bulk Station—**
Butler Mfg. Co.
Graver Corp.

**Tanks—Cylindrical—**
Graver Corp.
Petroleum Iron Works Co.

**Tanks—Elevated Steel—**
Chicago Bridge & Iron Works
Graver Corp.

**Tanks—Field Storage—**
American Car & Foundry Co.
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
United Iron Works, Inc.

**Tanks—Horizontal Storage—**
Graver Corp.
Kaw Steel Construction Co.
Maloney Tank Mfg. Co.

**Tanks—Run Down—**
Chicago Bridge & Iron Works
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Newton Process Mfg. Co.

**Tanks—Steel Storage—**
Chicago Bridge & Iron Works

**Tanks—Truck—**
Butler Mfg. Co.
Columbian Steel Tank Co.

**Tanks—Underground—**
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.

**Tanks—Welded—**
Chicago Bridge & Iron Works
Graver Corp.
Pennsylvania Engineering Works

**Taper Taps—**
Hughes Tool Co.

**Tapes—Measuring for Oil Gauging—**
Lufkin Rule Co.
States Engineering Co.

**Thermometers—Indicating and Recording—**
American Schaeffer & Budenberg Corp.
Bristol Co.
Brown Instrument Co.

**Thermometers—Resistance—**
Brown Instrument Co.

**Threading Machines—**
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.

**Thread Protectors—**
Spang & Co.

**Tires—Automobile—**
Continental Supply Co.

**Tires—Pneumatic & Solid—**
Kelly-Springfield Tire Co.

**Tires—Truck—**
Kelly-Springfield Tire Co.

**Tongs —**
Bridgeport Machine Co.
Wilson Oil Tools Corp.

**Tongs—Back Up—**
Williams, J. H., & Co.

**Tongs—Break Out—**
Reed Roller Bit Co.
Williams, J. H., & Co.

**Tongs—Casing—**
Dunn Mfg. Co.
Guiberson Corp.

**Tongs—Chain Pipe—**
Armstrong Bros. Tool Co.
Williams, J. H., & Co.

**Tongs—Pipe—**
National Transit Pump & Machine Co.

**Tongs—Rotary—**
Dunn Mfg. Co.

**Tongs—Tool Joint—**
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

**Tongs—Tubing—**
Dunn Mfg. Co.

**Tool Chests—Pipe—**
Nye Tool & Machine Works

**Tool Joints—**
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Reagan Forge & Engineering Co.

**Torches—**
Oxweld Acetylene Co.

**Towers—**
Graver Corp.

**Tractors—**
Cleveland Tractor Co.
International Harvester Co. of America.

**Trailers—**
Spencer Trailer Co.

**Transmission Belt—Rubber—**
Goodrich, B. F., Rubber Co.
United States Rubber Co.

**Transmission Lining—**
Stanley Belting Corp.

**Traveling Block—**
Lucey Mfg. Corp.
Reagan Forge & Engineering Co.
Wright Mfg. Co.

**Trenchers—Vertical Boom—**
Barber-Greene Co.

**Trucks—Motor—**
Ford Motor Co.
General Motors Truck Co.
Graham Brothers
International Harvester Co. of America

**Tubes—Boiler, Charcoal Iron—**
Byers, A. M., Co.
Reading Iron Co.

**Tubes—Boiler Steel—**
Continental Supply Co.
National Tube Co.
Ryerson, Jos. T., & Sons, Inc.

**Tubing—**
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
Continental Supply Co.
National Tube Co.
Pittsburgh Steel Products Co.
Reading Iron Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

**Tubing Catchers—**
Dunn Mfg. Co.
Guiberson Corp.

**Tubing Protectors (See Rod Guides)—**

**Tubular Goods—**
Babcock & Wilcox Tube Co.
Central Tube Co.
Continental Supply Co.
Oil Well Supply Co.
Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.
Wheeling Steel Corp.

**Tubular Goods—Wrought Iron—.**
Byers, A. M., Co.
Reading Iron Co.

**Turbines for Lighting Equipment**
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

## U

**Underreamer Body Steel—**
Andrews Steel Co.
Heppenstall Forge & Knife Co.

**Underreamers—**
Bridgeport Machine Co.
Brown Tool Co., Inc.
Guiberson Corp.
Wilson Oil Tools Corp.

**Unions—**
Central Forging Co.
Dart, E. M., Mfg. Co.
Jefferson Union Co.

## V

**Valuations—**
American Appraisal Co.

**Valves—Blow-Off—**
Homestead Valve Mfg. Co.
Merco Norstrom Valve Co.

**Valves—Brass & Bronze—**
Homestead Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Co.

**Valves—Cast Steel—**
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Walworth Co.

**Valves—Check—**
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Walworth Co.

**Valves—Drop Forged Steel—**
Edwards Valve & Mfg. Co.
Vogt, Henry, Machine Co.

**Valves—Gate—High and Low Pressure—**
Chapman Valve Mfg. Co.
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.
Walworth Co.

**Valves—Iron—**
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Merco Nordstrom Valve Co.
Reading Steel Casting Co.
Walworth Co.

**Valves—Metal Pump—**
Durabla Mfg. Co.

**Valves—Pump—**
Garlock Packing Co.
United States Rubber Co.

**Valves—Relief—Supersensitive—**
Davis, G. M., Regulator Co.

**Valves—Steel—**
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works
Powell, Wm., Co.
Reading Steel Casting Co.
Walworth Co.

**Valves—Tank Vent —**
Brooks Engineering Corp.
Oil Conservation Engineering Co.

**Valves—Working Barrel—**
Atlas Ball Co.
Axelson Machine Co.
D&B Pump & Supply Co.
Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.

**Varnishes—**
Arco Company, The
Detroit Graphite Co.
Sherwin-Williams Co.

**Ventilators—Roof—**
Burt Mfg. Co.

**Vises—Bench—**
Nye Tool & Machine Works

**Vises—Pipe—**
Nye Tool & Machine Works

**Vises—Post—**
Nye Tool & Machine Works

## W

**Wagons—Truss Wheel—**
Athey Truss Wheel Co.

**Walking Beams—Steel—**
Emsco Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

**Water Cooling Systems—**
Power Plant Equipment Co.

**Waterproofings—Concrete—**
Master Builders Co.

**Waterproofing Materials—**
Celite Products Co.

**Water Softeners and Filters—**
Butler Mfg. Co.
Graver Corp.

**Wax—**
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

**Weight Indicators—**
Hughes Tool Co.

**Welding Accessories—Electric—**
Wilson Welder & Metals Co.

**Welding and Cutting Apparatus—**
Oxweld Acetylene Co.

**Welding Machines—Electric—**
Wilson Welder & Metals Co.

**Welding Supplies—**
Oxweld Acetylene Co.

**Welding Wire—**
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.

**Well Shooting—**
Eastern Torpedo Co.
Kinley, M. M.
Zero Hour Torpedo Co.

**Wheels—Pipe Cutter—**
Nye Tool & Machine Works

**Winches—**
Braden Co.
Brooks Engineering Co.
Oil Conservation Engineering Co.

**Wire Lines (See Cables—Steel—**

**Wood Patterns and Models—**
Gaso Pump & Burner Mfg. Co.

**Working Barrels—**
Axelson Machine Co.
D&B Pump & Supply Co.
D. & N. Specialty Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor, Working Barrel Co.
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.

**Wrenches—Closet Spuds—**
Nye Tool & Machine Works

**Wrenches—Drop Forged—**
Williams, J. H., & Co.

**Wrenches—Pipe—**
Trimont Mfg. Co.
Walworth Co.

**Wrenches—Ratchet—**
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works

## Z

**Zinc Oxide—**
Eagle-Picher Lead Co.

# Oklahoma-Kansas and Eastern Pipeline Report

## OKLAHOMA-KANSAS PIPELINE STATEMENT FOR JULY

### Runs

| | Month | Daily Av. |
|---|---|---|
| *Prairie Pipe Line Co. | 4,061,000 | 131,000 |
| Gulf Pipe Line Co. | 1,294,335 | 41,753 |
| Texas Pipe Line Co. | 620,352 | 20,011 |
| Magnolia Pet. Co. | 1,197,214 | 38,620 |
| Empire Pipe Line Co. | 701,728 | 22,636 |
| Cosden Pipe Line Co. | 798,341 | 25,753 |
| Sinclair Pipe Line Co. | 1,817,530 | 58,630 |
| *Other lines | 7,731,000 | 251,000 |
| Total July | 18,271,500 | 589,403 |
| Total June | 17,014,842 | 567,161 |
| Difference | 1,256,658 | 22,242 |

### Shipments

| | Month | Daily Av. |
|---|---|---|
| †Prairie Pipe Line Co. | 4,234,294 | 136,590 |
| Gulf Pipe Line Co. | 1,112,450 | 35,886 |
| Texas Pipe Line Co. | 748,852 | 24,157 |
| Magnolia Pet. Co. | 1,548,204 | 49,942 |
| Empire Pipe Line Co. | 817,678 | 26,373 |
| Cosden Pipe Line Co. | 841,880 | 27,157 |
| †Sinclair Pipe Line Co. | 2,515,377 | 81,141 |
| *Other lines | 7,967,000 | 257,000 |
| Total July | 19,785,635 | 638,246 |
| Total June | 19,357,803 | 645,260 |
| Difference | 427,832 | 7,014 |

### Stocks

| | |
|---|---|
| *Prairie Oil & Gas Co. | 27,450,000 |
| *Prairie Pipe Line Co. | 2,000,000 |
| Gulf Pipe Line and Gypsy Oil | 6,582,110 |
| The Texas Company | 2,978,951 |
| Magnolia Pet. Co. | 4,136,562 |
| Empire Pipe Line Co. | 2,620,291 |
| Cosden Pipe Line Co. | 1,873,424 |
| *Sinclair Crude Oil Purchasing Co. | 18,000,000 |
| Carter Oil Co. | 12,708,112 |
| *Other lines | 9,300,000 |
| Total July | 87,649,450 |
| Total June | 89,443,202 |
| Difference | 1,793,752 |

*Estimated.

†Prairie shipments include Texas crude oil. Sinclair shipments include Texas and Wyoming crude oil.

**Note: Stocks do not include 4,800,000 bbls. of crude oil held in storage on private tank farms and leases.**

## EASTERN PIPE LINES

### Runs From Wells

In the following table will be found the regular receipts from wells by various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

| | July, '26 | Aug., '26 |
|---|---|---|
| Nat. Transit | 163,355.48 | 161,323.78 |
| S. W. Pa. P. L. | 101,686.03 | 96,367.93 |
| Eureka P. L. | 392,989.67 | 381,142.94 |
| Buckeye P. L. (Macksburg) | 306,269.80 | 307,707.87 |
| Buckeye P. L. (Cleveland) | 11,170.47 | 11,268.78 |
| Buckeye P. L. (Lima, etc.) | 137,149.47 | 128,103.04 |
| Indiana P. L. | 10,828.41 | 10,825.64 |
| Cumberland P. L. | 282,211.58 | 278,950.07 |
| N. Y. Transit | 21,334.18 | 20,228.51 |
| Tidewater P. L. | 168,664.93 | 166,318.60 |
| Pure Oil Co. | 176,480.50 | 168,350.74 |
| Emery P. L. | 53,064.83 | 53,942.07 |
| Indian Ref. | 104,990.12 | 103,177.03 |
| Paragon Dev. | 22,718.44 | 22,043.09 |
| Pittsburgh P. L. | 6,486.24 | 5,960.11 |
| Total | 1,959,400.15 | 1,916,270.20 |
| Daily average | 63,206.46 | 61,815.17 |

Note—Indian Refining Co. also reported other receipts of 255,477.05 bbls. Paragon Refining Co. had other receipts of 154,122.42 bbls. Paragon Development had other receipts of 1,538.22 bbls. Pure Oil had other receipts of 72,926.96 bbls.

### Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

| | July, '26 | Aug., '26 |
|---|---|---|
| Nat. Transit | 370,891.32 | 419,519.29 |
| S. W. Pa. P. L. | 409,458.00 | 407,494.63 |
| Eureka P. L. | 194,592.54 | 206,253.08 |
| Buckeye P. L. (Macksburg) | 154,972.89 | 139,988.47 |
| Buckeye P. L. (Cleveland) | 1,408.19 | 727.93 |
| Buckeye P. L. (Lima, etc.) | 896,654.71 | 787,040.76 |
| Indiana P. L. | 995,699.54 | 996,002.96 |
| Cumberland P. L. | 168,426.65 | 149,487.18 |
| Southern P. L. | ..... | 2,461.03 |
| N. Y. Transit | 648,783.66 | 437,982.40 |
| Northern P. L. | 185,783.37 | 199,543.86 |
| Tidewater P. L. | 107,643.02 | 130,278.71 |
| Pure Oil Co. | 238,473.30 | 259,867.54 |
| Emery P. L. | 54,161.96 | 56,844.78 |
| Paragon Ref. | 159,136.74 | 134,578.87 |
| Indian Ref. | 372,128.62 | 357,390.83 |
| Paragon Dev. | 24,924.64 | 18,580.37 |
| Pittsburgh P. L. | 7,169.75 | 5,737.74 |
| Total | 4,989,308.90 | 4,709,789.43 |
| Daily average | 160,945.45 | 151,928.69 |

### Gross Stocks

The gross stocks held by various pipelines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of July and August were as follows:

| | July, '26 | Aug., '26 |
|---|---|---|
| Nat. Transit | 1,053,770.84 | 1,095,592.26 |
| S. W. Pa. P. L. | 683,787.99 | 644,407.20 |
| Eureka P. L. | 1,483,121.26 | 1,426,004.84 |
| Buckeye P. L. (Macksburg) | 415,112.82 | 461,200.92 |
| Buckeye P. L. (Cleveland) | 85,333.91 | 93,451.86 |
| Buckeye P. L. (Lima, etc.) | 2,428,415.17 | 2,585,933.06 |
| Indiana P. L. | 676,702.06 | 578,735.80 |
| Cumberland P. L. | 633,819.77 | 601,941.96 |
| Southern P. L. | 476,270.69 | 404,780.18 |
| N. Y. Transit | 822,714.93 | 748,135.27 |
| Northern P. L. | 433,011.93 | 385,641.31 |
| Pure Oil Co. | 450,205.94 | 429,758.51 |
| Emery P. L. | 37,324.53 | 34,677.04 |
| Paragon Ref. | 36,255.80 | 55,343.93 |
| Indian Ref. | 110,400.30 | 109,296.55 |
| Paragon Dev. | 4,313.95 | 9,506.06 |
| Pittsburgh P. L. | 4,124.64 | 4,641.24 |
| Total | 9,734,686.53 | 9,668,946.98 |
| Increase | 148,782.41 | *65,739.55 |

*Decrease.

### Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipelines at the close of July and August showing the gross stocks of the above fields:

| | July, '26 | Aug., '26 |
|---|---|---|
| Pennsylvania | 4,047,418.29 | 4,021,829.40 |
| Lima | 859,783.19 | 826,740.17 |
| Kentucky | 1,349,214.91 | 1,185,429.48 |
| Mid-Continent | 3,502,567.49 | 3,593,693.56 |
| Illinois | 75,702.65 | 41,254.37 |
| Total | 9,734,686.53 | 9,668,946.98 |

### Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

| | 1923 | 1924 | 1925 | 1926 |
|---|---|---|---|---|
| January | 75,790 | 62,638 | 56,831 | 55,630 |
| February | 71,092 | 68,023 | 60,606 | 60,394 |
| March | 76,592 | 68,721 | 60,575 | 61,644 |
| April | 75,614 | 71,058 | 63,062 | 63,919 |
| May | 77,365 | 63,942 | 59,217 | 60,580 |
| June | 77,593 | 63,230 | 61,270 | 64,131 |
| July | 71,879 | 64,208 | 62,639 | 63,206 |
| August | 76,910 | 59,942 | 59,686 | 61,815 |
| September | 72,358 | 62,920 | 62,510 | ..... |
| October | 76,256 | 64,976 | 60,995 | ..... |
| November | 70,762 | 56,282 | 59,350 | ..... |
| December | 69,271 | 55,814 | 57,974 | ..... |

### Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

| | 1923 | 1924 | 1925 | 1926 |
|---|---|---|---|---|
| January | 171,067 | 145,518 | 157,889 | 156,056 |
| February | 164,219 | 148,732 | 160,863 | 159,488 |
| March | 185,487 | 147,098 | 154,591 | 160,239 |
| April | 170,751 | 147,011 | 151,429 | 152,371 |
| May | 177,102 | 134,997 | 146,995 | 160,988 |
| June | 173,598 | 143,010 | 149,467 | 160,257 |
| July | 168,330 | 124,187 | 161,338 | 160,945 |
| August | 142,776 | 123,120 | 161,730 | 151,929 |
| September | 137,266 | 127,325 | 156,719 | ..... |
| October | 134,597 | 123,170 | 145,388 | ..... |
| November | 131,426 | 124,400 | 143,582 | ..... |
| December | 139,909 | 161,392 | 150,162 | ..... |

### Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

| | 1924 | 1925 | 1926 |
|---|---|---|---|
| January | 12,907,202 | 11,353,276 | 9,859,170 |
| February | 11,844,068 | 11,192,924 | 9,579,354 |
| March | 10,906,752 | 11,158,297 | 9,438,292 |
| April | 10,922,742 | 11,062,082 | 9,805,851 |
| May | 11,335,309 | 11,207,562 | 9,531,757 |
| June | 11,544,204 | 11,093,796 | 9,585,904 |
| July | 12,062,361 | 11,067,453 | 9,734,687 |
| August | 12,221,676 | 10,974,481 | 9,668,947 |
| September | 12,206,836 | 10,781,752 | ..... |
| October | 12,664,061 | 11,086,850 | ..... |
| November | 12,268,530 | 11,068,158 | ..... |
| December | 11,583,680 | 10,458,445 | ..... |

### Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

| 1925— | Receipts | Shipmts. | Stocks |
|---|---|---|---|
| July | 2,639.34 | 3,174.10 | 11,550.29 |
| August | 3,216.97 | 1,577.99 | 13,189.27 |
| September | 2,929.99 | 5,352.05 | 10,767.21 |
| October | 2,869.75 | 1,499.34 | 12,137.62 |
| November | 759.66 | 2,571.32 | 12,283.40 |
| December | 2,661.87 | 3,441.67 | 11,503.60 |
| 1926— | | | |
| January | 2,990.16 | 1,478.35 | 13,015.41 |
| February | 2,580.23 | 2,776.19 | 12,819.45 |
| March | 2,754.62 | 1,732.77 | 13,841.30 |
| April | 3,137.40 | 4,519.68 | 12,459.02 |
| May | 2,933.29 | 2,096.35 | 13,295.96 |
| June | 3,217.62 | 1,655.15 | 14,858.43 |
| July | 3,025.86 | 4,075.11 | 13,809.18 |

### The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

| | |
|---|---|
| Gross stocks Sept. 1 | 1,358,218.04 |
| Runs from wells | 672,194.22 |
| Other receipts | 381,177.20 |
| Regular deliveries | 485,553.54 |
| Other deliveries | 724,775.05 |

The amount of Illinois oil run by the Tide Water Pipe Co. in August was 25,601.70 bbls. and deliveries were 70,213.05 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

| | | |
|---|---|---|
| 1925— | | |
| August | 673,652.38 | 650,649.97 |
| September | 706,434.87 | 510,697.61 |
| October | 706,532.00 | 632,682.32 |
| November | 664,556.30 | 488,449.19 |
| December | 665,086.99 | 578,938.47 |
| 1926— | | |
| January | 665,243.62 | 516,083.76 |
| February | 632,611.99 | 506,310.51 |
| March | 753,300.74 | 524,625.95 |
| April | 610,957.04 | 487,604.09 |
| May | 682,416.07 | 498,456.90 |
| June | 693,102.34 | 558,054.94 |
| July | 713,490.66 | 490,092.82 |
| August | 701,795.92 | 555,766.59 |

The Tide Water Pipe Co., Ltd., also delivered in August 225,332.20 bbls. of Oklahoma oil.

## AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

| Average bbls. per day— | Atlantic Ports: Baltimore | Boston | New York | Philadelphia | Others | Total | Gulf Coast Ports: New Orleans Galveston | Port Arthur Baton Rouge | Sabine Pass | Tampa | Total | Total All Ports |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| April | 19,033 | 5,133 | 28,333 | 13,400 | 22,867 | 88,767 | ..... | ..... | 4,700 | ..... | 4,700 | 93,467 |
| May | 27,065 | 7,903 | 15,387 | 13,452 | 17,742 | 81,549 | ..... | ..... | 4,032 | ..... | 4,032 | 85,571 |
| June | 24,533 | 11,000 | 22,800 | 34,467 | 15,167 | 107,967 | ..... | ..... | ..... | ..... | ..... | 107,967 |
| July | 15,677 | 2,903 | 24,678 | 12,065 | 12,516 | 67,839 | ..... | ..... | ..... | 645 | 645 | 68,484 |

## AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

| Average bbls. per day— | Atlantic Ports: Baltimore | Boston | New York | Philadelphia | Others | Total | Gulf Coast Ports: New Orleans Galveston | Port Arthur Baton Rouge | Sabine Pass | Tampa | Total | Total All Ports |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| April | 15,200 | 14,000 | 76,833 | 10,633 | 39,333 | 156,000 | 19,200 | 24,900 | 2,000 | 4,433 | 50,533 | 206,533 |
| May | 12,387 | 12,258 | 75,516 | 11,645 | 21,548 | 133,355 | 17,710 | 45,226 | 1,936 | 5,677 | 65,549 | 198,904 |
| June | 15,800 | 10,800 | 87,300 | 6,500 | 21,267 | 141,667 | 25,300 | 42,267 | 6,547 | 3,900 | 78,033 | 219,700 |
| July | 21,517 | 7,774 | 89,548 | 4,774 | 26,194 | 149,806 | *13,226 | †39,774 | ‡2,032 | 4,452 | 59,484 | 209,290 |

*Received at Galveston district. †Received at New Orleans and Baton Rouge. ‡Received at Port Arthur and Sabine Pass.

## GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS
(IN BARRELS)

| | | California | Oklahoma | Texas | Kansas | Arkansas | Louisiana | Rocky Mountains | Eastern Fields | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| August: | Month | 21,055,580 | 14,441,040 | 11,936,079 | 3,558,087 | 7,450,580 | 1,858,543 | 3,250,448 | 3,177,000 | 66,677,357 |
| | Daily average | 677,599 | 465,480 | 385,022 | 114,777 | 240,341 | 56,727 | 104,853 | 102,484 | 2,150,883 |
| September: | Month | 20,062,763 | 14,826,040 | 11,264,890 | 3,393,270 | 6,457,950 | 1,776,570 | 3,235,625 | 3,212,000 | 64,228,108 |
| | Daily average | 668,759 | 494,168 | 375,496 | 113,109 | 215,265 | 56,219 | 107,854 | 107,067 | 2,140,937 |
| October: | Month | 20,015,076 | 14,921,199 | 11,196,511 | 3,477,146 | 6,409,281 | 1,871,330 | 3,394,990 | 3,248,000 | 64,534,033 |
| | Daily average | 645,648 | 481,329 | 361,178 | 112,166 | 206,751 | 60,382 | 109,500 | 104,774 | 2,081,743 |
| November: | Month | 19,095,907 | 14,590,980 | 10,650,087 | 3,221,760 | 5,927,955 | 1,758,882 | 3,088,121 | 2,992,000 | 61,325,692 |
| | Daily average | 636,530 | 486,366 | 355,003 | 107,397 | 197,599 | 58,629 | 102,937 | 99,753 | 2,044,190 |
| December: | Month | 19,249,711 | 14,128,848 | 10,930,455 | 3,308,816 | 6,047,883 | 1,763,966 | 3,187,164 | 3,086,900 | 61,698,743 |
| | Daily average | 620,959 | 455,608 | 352,595 | 106,736 | 195,093 | 56,902 | 102,812 | 99,552 | 1,990,282 |
| January: | Month | 19,069,563 | 13,674,813 | 11,049,715 | 3,250,536 | 5,489,604 | 1,726,390 | 3,136,280 | 3,014,000 | 60,410,901 |
| | Daily average | 615,147 | 441,123 | 356,442 | 104,856 | 177,084 | 55,690 | 104,396 | 97,226 | 1,948,741 |
| February: | Month | 17,163,963 | 12,392,016 | 9,943,232 | 2,877,812 | 4,756,836 | 1,584,184 | 2,778,605 | 2,931,000 | 54,427,648 |
| | Daily average | 612,999 | 442,572 | 355,115 | 102,779 | 169,887 | 56,578 | 99,236 | 104,678 | 1,978,844 |
| March: | Month | 18,825,786 | 14,312,886 | 11,014,238 | 3,334,887 | 5,115,837 | 1,889,663 | 3,161,250 | 3,249,000 | 61,003,547 |
| | Daily average | 608,283 | 461,706 | 355,298 | 107,577 | 165,027 | 60,957 | 101,976 | 108,032 | 1,967,856 |
| April: | Month | 18,091,771 | 14,468,190 | 10,799,760 | 3,330,120 | 5,127,510 | 1,959,570 | 3,231,404 | 3,183,000 | 60,191,325 |
| | Daily average | 603,059 | 482,273 | 359,992 | 111,004 | 170,917 | 65,319 | 104,239 | 106,100 | 2,006,377 |
| May: | Month | 18,667,144 | 14,507,008 | 11,940,797 | 3,516,640 | 5,482,939 | 2,231,938 | 3,459,489 | 3,317,000 | 63,122,955 |
| | Daily average | 602,166 | 467,968 | 385,187 | 113,440 | 176,879 | 71,998 | 111,596 | 107,000 | 2,036,224 |
| June: | Month | 18,269,417 | 14,073,510 | 11,783,550 | 3,366,450 | 5,064,760 | 2,205,480 | 3,437,905 | 3,365,000 | 61,566,072 |
| | Daily average | 608,981 | 469,117 | 392,785 | 112,215 | 168,822 | 73,516 | 114,597 | 112,167 | 2,052,202 |
| July: | Month | 18,743,199 | 14,657,482 | 13,983,759 | 3,613,267 | 5,019,892 | 2,173,813 | 3,336,664 | 3,348,000 | 64,876,076 |
| | Daily average | 604,619 | 472,822 | 451,089 | 116,557 | 161,932 | 70,123 | 107,634 | 108,000 | 2,092,777 |
| | Total 12 months | 228,259,870 | 170,988,012 | 136,493,073 | 40,248,791 | 68,251,037 | 22,800,829 | 38,697,945 | 38,222,000 | 744,062,457 |
| | Daily average | 625,369 | 468,460 | 373,954 | 110,271 | 187,263 | 62,468 | 106,022 | 104,718 | 2,038,527 |

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* * *

Fig. 601.

Figure 601—[450 to 600 pound pressure]—a sturdy pump designed for oil or water service. Extra long stroke gives straight line pull; practical absence of gasket surface adds to long, trouble-free operation.

Fig. 604.

Figure 604—Gaso Walking Beam and Power Pump for gas or vacuum. Constructed to stand world of abuse. For taking gas from pumping well or putting vacuum on well.

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